DOCUMENT RESUME

ED 026 097 LI 001 279

Developing Partnerships for California Libraries, Governor's Conference on Libraries (Sacramento, May 26-29, 1968).

California State Library, Sacramento.

Pub Date 68

Note-127p.

Journal Cit-News Notes of California Libraries; v63 n4 Fall 1968

EDRS Price MF-$0.50 HC-$6.45

Descriptors-Automation, Conference Reports, Federal Aid, *Financial Support, Information Centers, Information Systems, Libraries, *Library Cooperation, *Library Networks, *Library Planning, *Library Programs, Library Services, National Programs, State Programs

Identifiers-*California

Representatives from California government, business, industry, and all types of libraries met to discuss interlibrary cooperation and coordination. The addresses presented at the conference and included in these proceedings cover these topics: libraries of the future, major national issues in the development of library networks, library and information center partnerships in California, existing systems for information distribution and information networks, the New York State library program, public library cooperation in California, cooperation in relation to academic libraries, present and future federal library financing, and local library financing. Summary reports are included for group discussions which were devoted to communications, resources, planning, and financing. (JB)

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Issued quarterly in the interest of the libraries of the State by the California State Library.

Entered as second class matter December 1913 at the post office at Sacramento, California, under the act of August 24, 1912.

Accepted for mailing at the special rate of postage provided for in Section 1103, Act of October 3, 1917, auth. August 27, 1918.

NOTE: Abstracted in LIBRARY SCIENCE ABSTRACTS

news notes of california libraries

OFFICIAL JOURNAL OF THE
CALIFORNIA STATE LIBRARY

Vol. 63, No. 4, Fall, 1968

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printed in CALIFORNIA OFFICE OF STATE PRINTING

GOVERNOR'S CONFERENCE
ON
LIBRARIES

RONALD REAGAN
GOVERNOR

Theme:
Developing Partnerships for California Libraries

May 26–29, 1968
Sacramento, California

State of California
GOVERNOR'S OFFICE
SACRAMENTO 95814

RONALD REAGAN
GOVERNOR

It is my pleasure to invite you to attend and participate in a Governor's Conference on Libraries to be held in Sacramento at Hotel El Dorado, May 26 through May 29, 1968. The Conference will open on Sunday afternoon at 4:00 p.m. and close about 3:00 p.m. on Wednesday.

Purpose of the Conference is to bring together interested and knowledgeable Californians, representative of all levels of government, representatives of business and industry and a number of librarians of all types, public libraries, school libraries, public and private academic libraries, and special libraries serving business and industry, to discuss interlibrary cooperation and coordination.

The theme of the Conference will be "Developing Partnerships for California Libraries". Highly qualified speakers and informed panel members will make prepared presentations and there will be group discussion sessions. Your presence will contribute to the Conference and will facilitate stronger state/local relationships as you return to your community with useful information.

It is hoped that you will be able to participate in this important meeting. In order that our planning may proceed expeditiously, please return the enclosed card at the earliest date.

Sincerely,

Ronald Reagan

RONALD REAGAN
Governor

Enclosure

MESSAGE TO CONFERENCE

from

GOVERNOR RONALD REAGAN

I welcome you to this Conference on Libraries with the sincere hope that the exchange of information during the next three days will result in a positive step towards developing a public and private library service partnership.

Certainly the resources of school, local government, state, and private library and information centers should provide a balanced program of educational and cultural opportunity so necessary to a creative society. As our state growth continues and as our citizens in all age groups and at all levels of social and economic life continue to seek information by using the variety of educational media now available in all of our libraries, it becomes incumbent on all of us to analyze carefully our existing library resources in order to improve these necessary services to the public.

It is our hope that this conference will assist in providing the information which can be utilized by you as community leaders in meeting the local needs for library service. Your participation will assure a meaningful partnership program so essential to the State of California.

MRS. CARMA LEIGH, State Librarian, *Conference Chairman*

Conference Committee—Mark Baer, President, San Francisco Bay Region Chapter, Special Libraries Association; Don Benninghoven, Assistant Director, League of California Cities; David Brunton, Executive Director, California Library Association; Mrs. Phyllis I. Dalton, Assistant State Librarian; Ronald B. Frankum, Assistant to the Governor for Local Government; Glenn Paschall, Administrative Assistant, County Supervisors Association of California; Rutherford D. Rogers, Director, The Stanford University Libraries; Claude L. Settlemire, Library Consultant, California State Library; Dr. Raynard C. Swank, Dean, School of Librarianship, University of California, Berkeley; Ardell Wallen, Consultant, Program and Policy Office, State Department of Finance; Margaret J. Ward, Library Consultant, California State Library.

Conference Manager—Mrs. Evelyn D. Huggins.

Discussion Group Leadership:

Resource Consultants—John D. Amend, M. Virginia Hughes, Mrs. Ruth T. Kierstead, Ann E. Kirkland, Mrs. Constance L. McColm, Esther L. Mardon, Louise M. Stubblefield, Barbara L. Wynn.

Moderators—Dr. Sidney W. Brossman, Mrs. Catherine S. Chadwick, Donald T. Clark, Mrs. C. Raymond Clar, Rocco Crachi, Dr. Leslie H. Janke, C. Earle Short, Ernest Siegel, Elizabeth M. Walkey.

Recorders—Margaret Anderson, Mrs. Edith Bishop, J. Richard Blanchard, Mrs. Evelyn B. Detchon, Marjorie C. Donaldson, John Dooley, Dorothy Drake, William Emerson, Dean Galloway, Phyllis C. Irshay, Katherine Laich, Helen Luce, Mrs. Alyce L. Mackin, Mrs. Lois Magee, Harald Ostvold, Dale Perkins, Mrs. Jean Wichers.

Orientation Leader—Margaret J. Ward, Library Consultant, California State Library.

At the Governor's Conference: Mrs. Evelle Younger, member, Los Angeles Public Library Commission, and Lieutenant Governor Robert H. Finch.

CONFERENCE PROGRAM

Sunday, May 26

1–3:30 p.m.—Registration, Hotel El Dorado Lobby

4 p.m.—Opening of Conference, Cabana Room
Welcome: Mrs. Carma Leigh, California State Librarian
Pledge of Allegiance: Richard H. Marriott, Mayor of Sacramento
Message to Conference: Robert H. Finch, Lieutenant Governor of California
Reception

7:00–8:00 p.m.—Orientation Session for Conference Moderators, Resource Consultants, Recorders

8:30–9:15 p.m.—"The Library of the Future," a Multi-Media Presentation by Boyd Bolvin, Associate Dean of Instruction for Learning Resources, Bellvue Community College, Bellvue, Washington

Monday, May 27

8:30–9:30 a.m.—Registration, Foyer, El Dorado A

9:30 a.m.—Opening Session
Presiding: Mrs. Carma Leigh, Chairman
Opening Remarks and Announcements

11:30 a.m.–12:30 p.m.—*Resources, Communications*

Address, "What are the Major National Issues in the Development of Library Networks?" Dr. Launor F. Carter, Vice President and Manager, Public Systems Division, System Development Corporation, Santa Monica

Address, "Partnerships in California: How Can Books and Information be Mobilized for Every Californian?" Dr. Raynard C. Swank, Dean, School of Librarianship, University of California, Berkeley

Address, "Tomorrow's Library Services Today," Joseph Becker, Director, Information Sciences, Interuniversity Communications Council (EDUCOM), Bethesda, Maryland

12:30–2:00 p.m.—Luncheon Recess

2:00–4:00 p.m.—Group Discussions: "How Do We Develop *Real* Communications?"

4:00–7:00 p.m.—Dinner Recess

7:00–7:30 p.m.—Film: "The Challenge of Change"

7:30–9:30 p.m.—Group Discussions: "Are the Resources *Here?*"

Tuesday, May 28

9:30 a.m.–12 noon—*Planning,* Room A

Presiding: Mark H. Baer, President, San Francisco Bay Region Chapter, Special Libraries Association

Address, "New York Looks Ahead: A Challenge to California?" John A. Humphry, Assistant Commissioner for Libraries, New York State Education Department, Albany, New York

Address, "How Many Drops to Fill the Bucket?" Raymond M. Holt, Librarian, Pomona Public Library

Address, "Academic Libraries: A Poverty of Access?" Dr. Mark H. Curtis, President, Scripps College, Claremont

12:00 noon–2:00 p.m.—Luncheon Recess

2:00–4:00 p.m.—Group Discussions: "Are You Planning Partnerships?"

5:30–6:30 p.m.—No-host Hospitality Hour, Foyer, Room A

6:30–9:30 p.m.—Dinner Meeting: *Financing—Existing Resources, New Programs*

Presiding: Mrs. Carma Leigh, Chairman

Introductions

Address, "Library Financing at the Federal Level," Dr. Samuel Halperin, Deputy Assistant Secretary for Legislation, U. S. Department of Health, Education and Welfare, Washington, D.C.

Address, "Library Financing at the Local Level—The Santa Fe Springs Experience," William J. McCann, Mayor pro tem., Santa Fe Springs

Wednesday, May 29

9:30–11:30 a.m.—Group Discussions

12:30–2:30 p.m.—Luncheon and Final Session, Room A

Presiding: Robert J. Keyes, Assistant to Governor Ronald Reagan for Community Relations

Introductions

Summary Reports:

a) Communications: Helen J. Waldron, Library Manager, The RAND Corporation, Santa Monica
b) Resources: Rutherford D. Rogers, Director, The Stanford University Libraries
c) Planning: Don W. Green, Director, Market Research, Litton Industries, Inc., Beverly Hills
d) Financing: James Q. Brett, Senior Vice President, Coldwell, Banker and Company, San Francisco

Closing Remarks, Mrs. Carma Leigh

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Bellevue, Washington
Mr. Boyd Bolvin

Among the speakers at the Governor's Conference on Libraries were, l to r, Dr. Mark H. Curtis, President of Scripps College; Mr. John A. Humphry, Assistant Commissioner for Libraries, New York State Education Department; Conference Chairman Mrs. Carma Leigh; Mr. Mark H. Baer, President, San Francisco Bay Region Chapter, Special Libraries Association; and Mr. Raymond M. Holt, Librarian, Pomona Public Library.

WELCOME AND INTRODUCTORY REMARKS

Mrs. Carma Leigh
California State Librarian

As Chairman of this Conference and of the Planning Committee for Governor Reagan's Conference on Libraries, I want to welcome you here to your State Capital.

I am delighted at the strong and positive response you have given to Governor Reagan's invitation to you to attend, participate, listen, think, and discuss together the present state of libraries and information services in California, and to look and plan ahead toward what they should become in the future for our very complex society.

I hope you have all been able to get settled in your rooms and to pick up your registration packets and badges at the Conference registration desk.

In addition to the other comforts I am sure you have found in your rooms, I hope you have a good reading light. This is not only because we believe in reading, but also because we are very proud of the array of informational and factual materials we were able to assemble and place in the packets which each of you received as you registered. There has been the most outstanding cooperation from highly informed representatives of every type of library in California. They and others have supplied us with individual copies of these really valuable publications which carry essential and important information about all types of California libraries.

If we could have afforded it we would have mailed the packet to you in advance of your coming to this conference, so you could read it ahead. Since we could not, I am going to tell you that this is not one of those conference packets from which you throw 90% of the contents into the wastebasket!

I am only saying that if you will spend a good portion of this evening reading these materials, you will rise in the morning each a self-made, overnight authority on the general present status of all types of California libraries, and will know a good deal about the hopes and aspirations of each of the types of libraries for the future: college, university, school, public, and special libraries. You will want to refer to the materials throughout the conference, I believe. Hence, my hopes that you have a good reading light in your room and that, in addition to attending tonight our showing of "The Library of the Future" through audiovisual techniques, you will take time to read the publications that have been assembled for you to keep.

It seems superfluous to introduce the man who has become so well and favorably known throughout California as today's speaker.

In a comparatively short time he has endeared himself to many individuals and groups by his ready response to requests for his appearance as a speaker.

Lieutenant Governor Robert Hutchinson Finch was born in Arizona but has been a Californian for 35 years. He was educated in schools in Southern California, with a B.A. degree in political science from Occidental College and his law degree from the University of Southern California School of Law. His school activities included being editor of his high school newspaper, a letterman in athletics (track and football), and national collegiate oratorical champion.

He saw service in the United States Marine Corps from 1943 to 1945 and was recalled to active duty in 1951 during the Korean War; he was released as a First Lieutenant.

Lieutenant Governor Finch was senior partner in his own law firm, specializing in corporate, financial and real estate matters, and he has served as a board member of several financial institutions. He is a member of the Board of Trustees of Occidental College and of many clubs and organizations.

His activities in political circles are well known, especially the fact that he received the largest vote total and plurality of any Republican in California history, in the November, 1966 election that gave him this state's second highest office.

His interests in education are wide. We are particularly gratified and grateful for Lieutenant Governor Finch's interest in and knowledge of the many facets of library services and the needs of California libraries. Lieutenant Governor Finch is the very active California State Chairman of National Library Week for 1968, and he recently presented the "Marian the Librarian" Award (that title by the courtesy of composer Meredith Willson) to the California Librarian of the Year, San Marino Public Library Children's Librarian Beverly Saunders, in April.

It is a great pleasure and a great honor for me to present to you, to open this Governor's Conference on Libraries, the Lieutenant Governor of California, Honorable Robert H. Finch.

Facing page, Lieutenant Governor Robert Finch delivers the opening address.

OPENING MESSAGE

Robert H. Finch
Lieutenant Governor of California

I must say at the outset, with regard to the whole complex of problems that we are confronted with today, and the urban explosion that California is experiencing, that I am struck by the fact that, as we tackle the main problem of the urban explosion—the bringing of the disadvantaged into the mainstream of our society—education, and behind that the chief tools of education, which are the library and the written word, lie at the heart of this problem. Even though we are of different parties, I want to compliment Sacramento Mayor Richard H. Marriott for the work that he has done in the broader Sacramento area in this important field.

We have a new dialogue in this area about the impoverished, the poverty-stricken; and a substantial portion of the poverty we hear so much about today is, I think, a poverty of experience and of knowledge, of education. In California we have at least one major resource which has largely been overlooked in fighting poverty. That is the combined library system, and that is why we are meeting in this conference these several days.

At the same time that government is groping for ways and means to help or to free those caught in the throes of economic poverty, we are overlooking the great potential that is available to us from our libraries.

Although our laws provide for the establishment of all types of libraries, and the power to levy taxes and to appropriate funds, at all levels of government, to support them, the funds provided have never been adequate. We have recognized, even from the earliest years of our state, the need for libraries as a resource; but we have had no requirement or provision for keeping our libraries up to date for the needs of today. Of course there is no way we can make their use mandatory; public libraries do exist in the meanest and most poverty-stricken of our poverty areas, and it is a sad commentary on our overcrowded, overtaxed, and poverty-stricken cities that too often we have allowed libraries to become so poverty-stricken themselves that those who could use them do not do so because of their very despair. More and more we are looking for new panaceas for the critical problems of these areas, whether out of genuine humanity, or out of a growing fear, or out of articulated expression of long unspoken needs.

One of the most exciting aspects of the partnerships that are developing between libraries, whether they are public or private, is that, hopefully, more of the libraries' resources, and more of the time and energies of library staffs, are being freed and increased, to attract and bring into the libraries people of all ages, especially those who are underprivileged and in poverty. Our libraries must be revitalized, modernized, and brought back into their proper role, to relieve the poverty that is the poverty of soul, communication, and knowledge. This means that the library systems and you who run them, must, in the words of Lincoln, "think anew, act anew." You must be innovative, creative; and the sad, introverted image of the dusty library staffed by the dusty and frustrated librarian must be recast.

The concept of the library as a place of limitations and prohibitions must be done away with. The library must not only open its doors full-time—I find that few of our libraries are open on Saturdays and Sundays—it must advertise, and make known to the public what its facilities and services are. Library service cannot be limited to those who understand the Dewey Decimal or the Library of Congress classifications, or the card catalog, because the library is a community resource, and we must begin to reawaken this great Rip Van Winkle which is such a strong part of the heritage of our country.

Most of the people in this room know what our library resources are, but we need to think of new ways to communicate to the general public what those resources can do for them. I think it is the business of those in all levels of government to articulate what it is that this resource can do, as it is the business of this meeting, in these several days, to communicate what this resource can do for the people of California. Everybody is fond of saying that education and knowledge are our greatest growth-industry; but the point is that this growth is not reaching the hard core, the individual stricken by educational poverty, whether he is unemployed, or whether he is, indeed, affluent. We are not tapping this great library system resource. Again, this is the business of this meeting these several days, to plan many ways to do this.

Elbert Hubbard said, a long time ago, "This will never be a civilized country until we expend more money for books than we do for chewing gum." That is still true. This is one of several Governors' Library Conferences being held all over the nation, trying to catalyze citizen interest in the critical need for library development. As I have suggested, we cannot legislate interest in our library resources; but I think that if I were to offer a theme for these sessions, it would probably be in Gibran's words: "He is indeed wise if he does not bid you to enter the house of his wisdom but rather leads you to the threshold of your own mind." I think this is the exciting challenge that we are talking about in this group today.

In this time when we are experiencing more discontent of all our generations, not just the militants of the left nor the militants of the right, and not just one generation against another generation, we are testing every institution, our political systems, and our institutions of higher education. We put to each generation this great challenge.

And what is the major resource that each generation has to fall back upon? In my opinion, it is not the totality of input from television and from other such sources. I think the major resource is the surety of the written word, the record that can be consulted again and again, transmitted from the past to present and future generations. Without this, in Professor Joseph Tussman's words, "Every generation, left to its own devices, is doomed to recapitulate in a short time the entire history of human disaster."

The magnitude of human knowledge and the imperative need for the early acquisition and appreciation of the study skills becomes more pronounced when we realize that more than half of the objects of everyday life today were totally unknown as short a time ago as 1940. Within about five years the number of books published in this country will double, and this not only makes the strengthening of our whole library apparatus a necessity, but it also makes the integration, the fulfillment, the application of these resources, and the way we get across the message of how they can be utilized, even more imperative.

What I am really saying is that we have a greater need to tell the library story as it really is, and to get away from the old stereotype. This was brought home to me rather forcefully when I was campaigning a few years ago. Some of you may recall that about six years ago there was a namesake (but not relative) of mine by the name of Dr. Bernard Finch, who got into very deep trouble because he and his nurse Carol Tregoff were convicted of having murdered his wife. Some time afterward I was at a reception and a man came up to me and said, "Well, Doctor, I'm glad you're out." He was very patronizing, and said he didn't think I really did that terrible thing anyway. I was a little nonplussed. Then I introduced my wife, and *her* name is Carol—things went downhill from then on!

Our problem is that we've got to break out of these stereotypes and look at things as they really are, and not as we may have thought them to be. This has been part of our problem, I think, in every discipline—not only the discipline of politics, or the discipline of education, but equally the disciplines of library service.

There is a continuum of social evolution that we see about us. As we experience the urban explosion, we have a greater majority of people crowding together in cities and towns. We see a great change in the way people live, as a result of this crowding. 96 million people now live in the urban areas of the United States, on less than one percent of the surface of the land itself. By 1980, over 90 percent of Americans will live in urban areas, against 51 percent in 1920. The population of California has doubled in the last 15 years and it will double again in the next 15. This means that the whole dialogue of government, the whole dialogue of politics, the whole dialogue of education must recognize that we face new environmental problems, a whole new framework or time frame of discussion, not so much concerned with who gets what piece of the economic pie, but with the quality of life that we will enjoy and that our children will enjoy.

The burden upon you becomes not trebled, but quadrupled. I think that if we are to overcome the chief concern of this urban explosion, a fear that is very often unarticulated—that is, that we will all become a great faceless, anonymous, alienated mass, the paradox being that the more closely people live together, the more isolated they really become—then, really, we must come back to the written word as the best tool with which to break out of this fear.

We must develop new patterns of thinking about the library. There has to be a new concept of the library, with the library totally involved in the community and oriented to its real, basic needs. We must help the library to take the first step out of what Robert Kirsch referred to as the "marginal amenity category" where they get funds when there is something left over. We must encourage the libraries to become a catalytic, dynamic, vital part of the community's life. The library must become a community force; the librarian needs to be the catalyst between the local neighborhood and the library itself. In too many disadvantaged areas, books may be feared and unused because they represent the unknown, or they represent the feared Establishment.

The library must be innovative to reach the people. A great teacher once viewed an innovation with alarm. He said, "This invention of yours will produce forgetfulness in the minds of those who learn it, and cause them to neglect their memory." That speaker was Socrates, and he was talking about writing. Let us not underestimate the individual. Apathy may be ignorance in disguise.

I have been following with great interest the progress of the innovative concept of librarianship being evidenced in Los Angeles—in Venice and Lincoln Heights—where there are new, experimental programs to take books to the disadvantaged.

In the Los Angeles Public Library system, with the help of the federal Library Services and Construction Act, the attempt is being made by supplemental, specialized librarians to reach those who are deprived, and to awaken the reading interests of adults and young people by totally unorthodox methods. They hold read-ins, they show free movies, there are special materials designed for disadvantaged localities, for the Mexican-American community, and for the Negro community. In one area the library reached out and published stories written by local children. These were circulated many times over, and it was interesting to see how many times a book, written by one child, was picked up and read by others.

We have all seen bookmobiles. In Watts, for example, we have hundreds of books on loan now from a bookmobile that has records, that plays music—children dance to it. Art Seidenbaum, in the *Los Angeles Times,* described it aptly as "a noisy success, broadcasting the clang of ideas where there used to be so many signs of silence." In addition to the bookmobile program, the special project places deposits and books at teen posts, at foster homes, youth training centers, and anti-poverty offices. We also have a program of service to shut-ins, featuring home delivery of books to persons who because of physical disability or illness or advanced age cannot get to a library.

Through all of these innovative approaches we are seeing the image of the library change, from that of a warehouse of human knowledge to that of a vitalized community center for continuing education and recreation. This new approach we can see as well in Oakland, and in New York and Indiana, Ohio, and Wisconsin. We must see it to a greater extent in every community in California.

Most of these programs are aimed at poverty sections in metropolitan areas, though some are focused on rural areas, as in Fresno County, and, particularly, in Wisconsin, where they extend library service to migrant families. But as a community service, we must cover the entire spectrum of the disadvantaged, the advantaged, and the affluent, because we cannot "bear in" on one section to the exclusion of others and still do the job that the library is designed to do.

We in California have another great opportunity in these next two years, when we will be sending around automobiles and mobile services celebrating our 200th anniversary, the bicentennial of the colonization of California. We hope that libraries can be a chief vehicle in helping to display this highly significant event. We recognize that government can only suggest priorities for this celebration—we cannot lay down hard rules under which to operate. We have in this observance an enormous opportunity to tie together the library's need and opportunity to involve itself in the total community, and to point up the kinds of things that will sharpen interest among our young people in the great heritage we have in the State of California.

I would close by saying that we here in California have, I think, a peculiar challenge, because we are, in the best sense of the word, a microcosm of the whole country. We have in essence the kind of racial balance that we see throughout the United States, the kind of balance between urban and suburban living, the kind of balance between agriculture and the urban community. And so what we do, how we attack these urban and other problems, becomes very meaningful, not only for our own state, but also in terms of passing our experience on to the rest of the nation, and in terms of transmitting knowledge and making viable this transmission, this continuum from one generation to another—and in terms of recognizing that our whole educational process has changed.

When most of us in this room went to elementary school, we were treated as a kind of big vat or pot, into which a great deal of data was yet to be stored. Now, when our children come into kindergarten or first grade, they have had an exposure to three to four thousand hours of television, a whole totality of input that we never experienced. We have to recognize that now, when we place our children into our educational system, they are already far past the era of Jack and Jill. And so we who are concerned with the library system—which is a part of the educational system—must recognize that we have to alter our methods, that we have to be innovative and creative in approaching, and in challenging, these children. Because, as was once said of John Gardner, "He knows that words rightly used can be the straw that holds the bricks of our society together, and that words wrongly used can be the dynamite that can blow us apart." Your presence here today at this conference is evidence that there is concern for the future of this enormous resource that we all possess—our libraries. I wish you Godspeed for an enjoyable and stimulating and productive conference.

LIBRARIES OF THE FUTURE—A MULTIMEDIA PRESENTATION

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("A multimedia presentation is one of the newest audiovisual techniques. Consisting of a variety of media, it utilizes audio-visual equipment and materials in a well-organized and effective way, capitalizing on the strengths of each medium while avoiding its limitations. As an attention-getting device, it may have no equal. Since it uses two or three screens and a variety of audiovisual materials and projection techniques, the multimedia presentation can do away with the passiveness of an audience which may occcur when a single medium . . . is used." Boyd Bolvin, "Libraries of the Future: a Multimedia Presentation," [Washington] *Library News Bulletin,* Oct.–Dec., 1967, p. 286. The Multimedia Presentation involved the use of slides, 16mm film clips, overhead transparencies, audio tape, three slide projectors and screens, four 16mm film projectors, two overhead projectors, and a tape recorder.)

"At one end of the historical spectrum, a slave carving a message in a clay tablet; at the other a computerized push-button library. Today, after nearly 3,000 years of development, the library is just now entering the machine age, and the possibilities are so cloudy and complex that no one can say with assurance how fast or how far the mechanization or automation of the library will travel in the foreseeable future."

What is bringing about this noticable change in libraries? Why is it that the library must mechanize or automate in order to fulfill its role as the live depository of the cultural past and to provide the kinds of services its users demand?

It is because of certain kinds of "revolutions" taking place within our society, such as the communications revolution, the computer or automation revolution, the revolutions taking place within science and technology, the technological revolution now beginning to take place within the field of education. These technological revolutions certainly affect our society in general, and education and libraries in particular. And it is because of the growth in population and the twin explosions of knowledge and information.

If we consider the growing population for a few minutes, we find that the world's population first doubled around the year 1650. It then doubled again in 1850 and in 1930, and is expected to double again in 1975 and in the year 2010.

If we examine the growth of knowledge, we will find that beginning with the birth of Christ, it took 1,750 years for all of knowledge to double. Then it took only 150 years to double the second time, then only a period of 50 years. Then only 10 years, for all of knowledge doubled in 1960. Now most experts on the subject feel that all of knowledge has doubled again this year. You can see what will happen eventually if this trend continues—knowledge will be doubling every year—or even in part of a year.

But even more dramatic than this is the Information Explosion. It has been said that enough information is published every 24 hours to fill seven complete sets of encyclopedias, that there are more than 2,000 pages of books, newspapers, or reports published somewhere in the world every 60 seconds. If you attempt to keep fully informed on everything going on in the world (through reading)—and you devoted every day—all day—to reading alone, you would fall behind an estimated 1,051,200,000 pages for every solid year that you would devote to reading.

The information explosion, or "literature explosion" as some have referred to it, can be further illustrated by the fact that the world's annual production of books has been estimated to be 320,000 separate titles—nearly 1,000 fresh works published every day. In addition some 33,000 newspapers and 70,000 periodicals are published on a regular basis; maps, music, filmstrips, films, phonograph records, and research reports swell the total, which is probably about 10,000,000 separately identifiable titles. Were there no other problems, the mere rate of publication and acquisition would create problems of the resultant size of collections.

Although it is difficult to obtain an accurate account, it can be said that there are almost 100,000 scientific and technical journals being published in more than sixty languages, today, with new journals appearing at the rate of at least two a day. This year's journals will carry between one million and two million scientific and technical articles. It can be truly said that the scientist and research worker can no longer keep up with, much less read, the published materials in his own field; yet progress in science and technology is certainly dependent upon the availability of accurate, up-to-date information.

This "information problem" is perhaps the largest task facing the nation as a whole. Not only do we have information increasing exponentially, but as the amount of available information grows, there is a parallel need for a more precise capability to retrieve specific data in any area of interest. Libraries have felt an increasing demand by users for access to sections of books and periodicals, even paragraphs, where vital information may be stored. Scientists and engineers, in particular, are haunted by the fear that they are working on problems whose solutions have already been found and published somewhere. A foreign periodical may hold the vital clue leading to a new discovery, but the existence of the information may be unsuspected. As one engineer put it: "We are redesigning the wheel every week."

Since traditional library methods are somewhat limited in coping with this problem, there is a definite need for developing retrieval systems designed to "store" information appearing in many varied forms, and to make this information readily accessible and rapidly available to the user.

Microfilm is one storage medium which has been around for some time, but which has not been utilized to any great extent by libraries. Yet, it has tremendous potential, for it can compress a large volume into a small space. However, more needs to be done toward retrieving this information quickly and economically.

Today, there are four widely used microforms, each of which has its particular advantages and disadvantages. The one to choose for any particular application would have to depend upon the type of library user and his particular requirements. Two of these microforms are the open spool or roll type and the cartridge type. Up to 3,000 pages can be reduced to 16mm microfilm and put on a roll or housed in a compact cartridge.

The other two microforms are the aperture card and microfiche. With the aperture card system, up to eight letter-size documents can be reduced to one frame of microfilm mounted on a data processing card. This system combines microfilm efficiency with data processing speed. Microfiche, which consists of short strips of microfilm placed on sheets of film, offers a lot of potential for libraries and information centers. One 4″ x 6″ sheet or card can hold up to 100 pages reduced from 8½ x 11, and this is more than adequate for most scientific documents. Prints and enlargements can be made quickly and economically. It is perhaps the best method yet available for the dissemination of scientific literature.

One of the most promising developments in miniaturization is the new Photochromic Micro-Image process discovered by the research scientists of the National Cash Register Company. An area reduction of about 900 to 1 is the best that can be expected from microfilm; but photochromic micro-images, by contrast, can be reduced by 40,000 to 1. This development does hold promise of revolutionizing the storage and retrieval of information; for a square no larger than a postage stamp would hold a 200 page book. Yet each page could be displayed and read very easily by the NCR reader, and full-size hard copy could be made of any page, in seconds, by the user. The quality of the image is very good.

Instead of up to 100 pages, the PCMI technique will put 3,200 pages on a single sheet of microfiche. This development has led to a discussion of a wallet-sized library—for already in the laboratory, whole books have been microfiched to wallet size.

Still efforts continue to compress more and more information in less and less space. Republic Aviation, a Long Island, New York firm, is perfecting a technique for squeezing 10,000 pages on a single microfiche.

Miniaturization does offer a great deal of promise to libraries, in reducing the storage space needed to house their collections. For example, using the PCMI technique, the entire contents of the Library of Congress could be housed in one 4-drawer filing cabinet.

However, it is the computer which is destined to play one of the most important roles in the library of the future. It will be the efficient use of the computer which will determine to such a great extent the success or failure of libraries to meet the needs of their users.

Micro-circuit technology helped to usher in the "third generation" of computers and IBM's 360 computer system. Its central processing unit can put up to 8 million characters of data at the user's fingertips. These third generation computers—which were first demonstrated in April of 1964—not only have this large storage capability but they also have the tremendous speed which can permit rapid retrieval of data and information. System/360 can process data in millionths of seconds. Yet, the speed of fourth generation computers, which should be introduced to the public sometime before 1980, will be measured in nanoseconds; and as you may know a nanosecond is to a second as a second is to 30 years—a sliver of time so thin that it is beyond mental grasp.

By making efficient use of micro-miniaturization techniques and by utilizing the speed as well as the storage capability of computers, it ought to be possible to solve many of the library's information storage and retrieval problems.

Automation in some form or another is finding its way into many of the nation's libraries. Its main purpose has been to accomplish with ease and efficiency those tasks which existing library techniques and devices, the card catalogs, the bibliographies and the indexes, either cannot now do, or can do only with the greatest of difficulty and inconvenience.

Today, there is a real shortage of professionally trained librarians. Although librarians are the prime source of assistance to library users, they now spend a good deal of time performing repetitive operations that could be handled by data processing equipment. The use of data processing equipment can help the librarian satisfy the primary goal of his profession—serving the library user efficiently and economically.

Although the area of bibliographic organization and control will continue to be the first area of the library to reap the benefits of automation, eventually the most significant effect of automation will be the placing of the full resources of the library at the immediate disposal of the user.

Automation or mechanization in the library has been used principally in the areas of acquisitions, serial records, and circulation control, and to produce book catalogs. Of these, a great deal of attention has been given recently to the use of automation in circulation control. American University, Florida Atlantic University, Southern Illinois University, Rice University, Western Washington State College at Bellingham, and Shoreline Community College in Seattle, to name a few, have automated their circulation procedures.

Acquisitions, serial records, and book catalogs, because they are constantly being extended and updated, are naturals as far as automation is concerned. Penn State University has done notable work in automating acquisitions procedures. The University of California at San Diego has been experimenting for several years with the use of data processing equipment for maintenance of library records of serials holdings, while the King County Library, the North Central Regional Library, Timberland Library Demonstration and the Aerospace Division of Boeing—among others—have been producing computerized book catalogs.

While the potentials of data processing are great, we should not overlook many other developments now improving service to the user in ways which do not utilize computers.

Long distance xerography, dataphone, and facsimile transmission, for example, are being introduced into the library picture. The transmission of research materials over long distances offers a service potential which is staggering to the imagination. In Washington State we have moved rapidly along these lines with our State Controlled Area Network (SCAN).

In some instances CCTV has been utilized for the training of staff at widely scattered units, and user-oriented equipment has been developed for specific retrieval systems, such as the Microcite Machine developed by Joshua Stern at the National Bureau of Standards and used there as well as in one of the special libraries of the National Institutes of Health. This information storage and retrieval machine (which is not yet available commercially) employs a special punch card technique known as "peek-a-boo" and stores up to 50 film sheets, each containing 20,000 microimages or a grand total of 1,000,000 images.

On the very top of the Microcite Machine is the video screen which displays the image. The hand wheels used to dial the image are at either side of the machine easel. If each image were an abstract of a document, the user would have at his fingertips the abstract of 1,000,000 documents—and the user would at all times have control of the search process, all of this capability and potential in a noncomputerized information system.

These are but a few of the ways in which automation or mechanization is at work in libraries, today. Later on we will discuss the role of computers in information storage and retrieval.

Today, bright new libraries with yards of glass walls and spacious rooms are luring the public. They are offering the public free film programs, art exhibitions, discussion groups, more attractive book collections, and other promotional devices. By latest count, the number of libraries in the United States—public libraries and school and college libraries, general libraries and specialized libraries—has mounted to the impressive total of 70,502.

Public schools with centralized libraries account for nearly 70% of this total figure; public libraries and their branches make up 15% of the total, while university and college libraries (including junior college libraries) account for nearly 4%. The remainder is made up of various types of general and special libraries.

The public library is a multi-purpose institution that reflects and influences the tastes and requirements of its extremely various publics. The university library reflects the activities and standards of the intellectual community it serves. The special library reflects a source of intensive dedication to highly valued fields of knowledge. School libraries, recently in rapid development, reflect the efforts of educators to raise intellectual standards. Each type of library will play an important part in the library networks of the future. Libraries will be interconnected to form regional and national networks so that the resources instantly available to each user will be enormously widened.

Libraries must cooperate as much as possible in the future if they expect to provide the kinds of services their users demand. The library profession has long recognized the value of working together. In fact, in one of the most recent publications of the American Library Association, *Minimum Standards for Public Library Systems,* the entire set of standards is based on the principle of establishing larger units of service or systems of libraries.

In school libraries, cooperation is also taking place. Patterns for more and more cooperative efforts are being created.

Refinement in interlibrary cooperation is leading toward the information network concept. A national network of all types of libraries with the help of dataphones, facsimile transmission, and the computer would make it possible for any library user to have—in effect—the entire informational resources of the nation at his fingertips.

The place of the Library of Congress at the heart of a national network was acknowledged by inclusion of a $19 million authorization in the Higher Education Act of 1965 to enable the library to expand its central cataloging service. Congress appropriated $3 million for this purpose in the past fiscal year.

At the Library of Congress, automation has been planned in terms of other libraries from the start. Because the national library's cataloging and bibliographic operations are central to the work of many libraries, its early studies of its own operations more than a decade ago were seen as preliminary to a survey of the possibilities of automation in research libraries in general. The report of the team of experts whom LC asked in 1961 to survey the potentials in depth was published in January 1964 under the title "Automation and the Library of Congress"—not *in* the Library of Congress. The experts reported that is it not yet feasible to retrieve the intellectual content of books by computer in large research libraries, but that its coming would be hastened by automating three areas of library work: bibliographic processing, catalog searching, and document retrieval.

The Library of Congress set its course in these directions. After many planning conferences with other libraries, LC launched in November, 1966, its pilot project for Machine Readable Catalog data, now known as MARC to most of the library world. For its pilot phase from November 1 through June 30, 1967, MARC distributed experimentally to 16 participating libraries of all types, including the Washington State Library at Olympia, the magnetic tapes containing cataloging data produced weekly by LC for current English-language books. MARC is now in transition to becoming a production service.

MARC records can be adapted to a wide variety of uses by the individual libraries receiving the magnetic tapes. Some examples are the experimental book catalog produced by the Washington State Library, Yale University Library's computer-printed catalog cards, and the cataloging worksheets with searching slips produced at the University of Toronto Library from MARC records.

Meanwhile, the Library of Congress is engaged in a larger effort looking toward an automated system. Today, in the 16 reading rooms at the Library of Congress and in other research libraries, scholars consult the card catalogs or book catalogs for access to information in library materials. In the future, the scholar will ask a librarian to query the computer about materials on his subject. In realizing an automated system on the vast scale planned by the Library of Congress, however, there are many problems yet to be resolved, and that system is still in the future. But despite problems of cost and personnel, there is no doubt that, as Quincy Mumford, the Librarian of Congress, has noted, "The computer is fast becoming as essential in today's library as the time-hallowed card catalog was in yesterday's."

The library of the future will be a true storehouse of learning materials of all types and in all sizes and shapes; for the day is long past when libraries stored books alone. Books, of course, will always be basic, even though their contents will be made available to the user in many varied forms. However, in addition to books and microforms, all libraries must make provision for all kinds of nonprint materials such as films, filmstrips, slides, audio and video tapes—and the machines needed to make use of these audiovisual media.

In some libraries, portable tape recorders and slide and film projectors, and even small television sets, can be checked out at the reserve desk for use within library carrels or other places set aside for these purposes. In others, equipment such as tape recorders are built into the learning carrels.

As libraries have traditionally geared their programs to meet the needs of the individual user, they will in the future become increasingly more involved in providing media and materials for independent study, such as programmed instruction in the form of a programmed textbook, and in the form of a scrambled textbook, as well as machine-mediated instruction in both visual and audio formats. There are media such as the silent 8mm single concept film in which a few minutes of film—usually three to five minutes—are put into a continuous loop cartridge, simplifying its use by even the youngest child. This is one of the most promising techniques for individualizing instruction.

Libraries will also be making available for individual and small group use the 8mm sound cartridge projector which provides audio to go with the visual images. In addition to making available equipment and materials which the individual user can check out for use within the library, the library of the future will make provision for what has been referred to as environmental or electronic carrels. This type of carrel would be equipped to receive information in a number of forms.

Here, the individual user could dial for the audio or visual material he wants according to a directory which would list, for example, daily, weekly, and bi-weekly schedules of offerings. For example, he may dial 28 and hear a recording of Handel's *Messiah,* or he may dial in on any number of pre-recorded programs or lessons—what he wants when he wants it or needs it. Sometimes, instead of dials, push buttons are used—but the random-access features are the same.

One of the newest dial-access retrieval systems currently in operation is that in Beverly Hills, California. One of the oldest is the installation at Oklahoma Christian College, which is rather unique in that every student has his own individual learning carrel.

At the moment, the major application of dial-access systems is the retrieval of audio information; however, video retrieval is growing fast, as can be seen in the installation at Oral Roberts University. For greater flexibility, and effectiveness, carrels should be provided with video-screens whenever and wherever possible.

Although a number of libraries contain environmental or electronic carrels at the present time, much greater use will be made of this type of carrel in the near future. Besides being located throughout the library, they may be scattered around the school or campus—wherever the users might need them—so that the user will have access to the media and materials of the library at any time of the day or evening.

CAI is another area in which many libraries will become involved. At present it is used experimentally as an instructional tool by a number of colleges and universities, but as it is designed to meet individual needs, it will have important implications for the library of the future.

In the Plato system at the University of Illinois, we have an arrangement whereby many can be looked after by a single computer. A typewriter is hooked to the computer and a television display device. The program is rather interesting in that as soon as the student is running into trouble he can push the HELP button. Then, when he sees the answer, he can push the AH-HA button.

The use of programmed instruction under computer control offers tremendous potential for individualizing instruction, perhaps more than any other technological innovation. Computer-assisted instruction can provide each learner with his own individual path through the lesson and permit him to proceed at his own rate.

Will the book have a place in the automated library of the future? Some argue forcefully that the library and the book itself are mere relics of an inefficient past, that the job of storing, retrieving and transmitting information will, in future, be accomplished without either. They point out that there is nothing inviolable about the book or its storehouse, that cuneiform tablets gave way to papyrus rolls, that medieval manuscripts gave way to books, and that books are already sharing the job of communicating information with other carriers. The rise of the computer and the development of a whole new technology of information, these prophets charge, will inevitably transform the role of the book in modern society; and books, and in fact libraries themselves, will ultimately be replaced by a desk-size cabinet containing 20,000 or more volumes on microfilm, giving the reader of the future the world's knowledge at his fingertips.

The consensus of professionals in the field is that, in the library of the future, books will continue to play the most important role and that libraries will become more rather than less important as sources of information and cultural recreation.

Pressured by the growing population, rising educational standards, and the knowledge and information explosions, as we have already pointed out, libraries are turning to automation for a solution to many of their problems.

The prototype of the automated research library is already in operation at the National Library of Medicine near Washington, D.C. This computer based system (known as MEDLARS for Medical Literature Analysis and Retrieval System) stores, analyses, and retrieves bibliographical medical information for the benefit of researchers. It also prepares the *Index Medicus* and other indexes and bibliographies for publication.

Developments like MEDLARS represent milestones on the path to the push-button library. By most of those who use the term, this is taken to mean a library based on a fully automatic information retrieval system. In such a library, the user would rely on machines not only to tell him where to locate the book or journal article he wants but literally to deliver to him its contents.

As a result, an intensive effort to solve the technical and intellectual problems associated with automatic information retrieval is now under way around the world. Researchers, technicians, scholars, librarians, and others are at work not merely in the United States, but in Japan, India, Belgium, Holland, France, England, and other nations, on the host of mechanical and related problems that still bar the way to the library of the future.

Invigorated by the outpouring of federal and state money, and encouraged by increased public appreciation and use, there is no doubt that all types of libraries—school, research, special, and public—will become increasingly more important cultural and informational centers in the years ahead.

How well will libraries adapt their various institutional forms to the conditions and requirements of the next few decades? This will depend very largely upon the capacity of library leaders to identify and interpret relevant trends—trends such as:

1. Libraries becoming the complete cultural and informational centers for the community, providing their users with all types of print and nonprint media and materials,
2. Libraries of all types cooperating with one another to provide more efficient service to their users,
3. Public, academic, special, and school libraries joining together into a national information or communications network in order to make available—in effect—all of the nation's library resources to any user, no matter where he lives, and
4. Getting the information to the user, instead of the user to the information.

Today, research libraries are on the verge of automation, with the public and lower school libraries adopting its most economically feasible elements. Leaders in our profession suggest that librarians of the future—freed from routine drudgery—will be able to pursue an expanded program of aid to all readers, including the disadvantaged. As one expert has said, "The province of the library is the PEOPLE—not just college graduates and persons of culture—but the masses as well."

The challenge is there. How effectively this challenge is met by libraries of all types—public, academic, special, and school—will determine to a great extent the shape of the Library of the Future and the effectiveness of the service provided its users.

(*Acknowledgements*: Many people contributed to this presentation, but the narration was developed principally from four sources: the June 2, 1967 issue of *Editorial Research Reports* (vol. 1, no. 21, pp. 403–418), which was devoted to "Library Expansion"; Alvin Toffler's "Libraries" in *Bricks and Mortarboards,* a report from Educational Facilities Laboratories (pp. 71–98); and the Library of Congress and the National Library of Medicine, both of which contributed useful information, slides and other visual materials.)

ADDRESS, "WHAT ARE THE MAJOR NATIONAL ISSUES IN THE DEVELOPMENT OF LIBRARY NETWORKS?"

Dr. Launor F. Carter
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My association with libraries goes back a long way. As a high school student I worked in the little library in Friday Harbor, Washington, and later I was a page in the University of Washington library for about five years. So I have seen libraries at the ground level, but never from the administrator's point of view. That is probably just as well. If I had been an administrator I would probably have a more sophisticated attitude toward the real problems of libraries, but I might also have a more conservative attitude toward what the new technology might do in libraries.

After Mr. Bolvin's fine presentation last night, I am going to try to talk about "what are the national networks," particularly as they apply to libraries and their problems as we see them today. I am going to try to say, where are we? what really can be done right now, in contrast to the libraries of the future which we saw last night?

I think the first problem is to define what we mean by "networks." It is easy to be very general about this. After all, we have had library networks, in a certain sense, for a long time. The Farmington Plan, for instance, is an example of a kind of library network. You are going to hear about library networks in New York; and other states—Connecticut, for instance—have networks in a certain sense. There may be a union list of holdings in the state, although not always; and perhaps there are teletype networks among the libraries, with requests going from the smaller libraries to the major ones for fulfillment. These are networks in a sense, but not I believe what we usually mean when we talk about a library network in the context of modern technology.

I want to try to define carefully what it is I have in mind. An information network or a library network, I think, has the following characteristics. First, we have two or more nodes, or centers of intercommunication and of data bases. One node or center, by itself, is not a network. You will remember that in the presentation last night we saw a Northwest region, a Southwest region, and so on throughout the country; and each of these was interconnected and could talk back and forth. The nodes are interconnected and are able to use each other's data bases, and that is very important. Each node presumably has a unique data base or capability—in terms of a bibliographic apparatus, in terms of unique holdings, in terms of the power of the computer center--and each one is able to call upon the others for assistance. You have nodes, then, which are interconnected by communications, and that is my second point. Third,

Dr. Launor Carter

each node in this system has remote users—the users are quite separated from the nodal center. Nodes in, say, Olympia, Bellingham, Hoquiam, Vancouver, Spokane, etc., could all be switched more or less automatically to a node in, say, Seattle or some other place. Those, then, are the three characteristics I think of a network as having: it has nodes, with a unique data base at each node; it is of course electronically switchable and has high-speed communications; and it has remote users.

I think the telephone system is a good analogy. A telephone central, with users connected to it, is a node, but not by itself a network. It is only when the switchboard in, say, Sacramento, is automatically connected with Los Angeles and San Francisco and Reno and New York that you have a network. It is not really an information network because the nodes themselves do not have data bases or computing power unique to themselves—they are simply switches. But with that slight exception, it is a good analogy.

It seems to me that what is required for an information network, in the sense in which we are using the term, is that first there must be at least two time-shared computer systems. I say time-shared because remote users have to be able to get on the computer system at their demand, to sit down at their teletype, touch telephone, complex display or whatever it may be and enter the computer system directly at their option, not when the computer is ready for them or through some batch process system. I take that to be fundamental.

Second, there must be a good high-speed, high-data-rate communication system; and of course we do have that. The Bell System and some of the other systems are really marvelous in that respect. If you have the money, you can buy extremely high-data-rate systems, like microwave; and with the satellites coming, these are going to become cheaper and more reliable and have greater capacity.

What kind of a data base do we want to have at our disposal? This is where we so frequently become very fussy when we talk about networks. What do we want? Many people only want bibliographic information—essentially, catalog cards. They want to be able to search, to get a union list, to know everything that was published in such-and-such; or they want to be able to narrow it down and find out what so-and-so published in 1961, and they want it right away. That is one kind of data base you may want to have in your network.

But that for some purposes is not adequate. You may want the kinds of information you have in secondary sources. You may want to have indexes, abstracts, citations, etc., and so some kinds of data bases have that kind of information in them. But that may not be adequate. Maybe what you will want is full text, and you may want to have it transmitted very rapidly. If you do, that is a horse of a different color, because that is much more expensive and much more difficult. So when you talk about data bases and communication nets, if you are going to talk exactly in terms of what can indeed be done, then you are going to have to define these things. How fast do you want it? How much capacity do you want it to have? What kind of data base are you talking about? Do you demand natural language transmittal? and so on. And it is a little misleading to talk about the desirability of networks without defining these things, because in theory you can have all this, but when you try to pay for it and you try to implement it, you have a very different problem. We tend to be led astray, I think, by expecting much too much, much too fast, and for much too small a cost, unless we define the various characteristics of what we are going to have in our network.

Now of course you can have mixed systems. You can have systems that don't have all of these characteristics—part of which are computer-based, part of which are on microforms of one nature or another, and part of which are the printed word in books or texts, or serials, or what have you. And I think that is the most probable direction in which we will go, rather than having "pure" networks.

With that introduction, let me now describe a network or two. They do not quite fulfill my definition of what a network is, but they are examples of what is now existing. The first is the system called ORBIT: and naturally, since I come from the System Development Corporation, this is an SDC-developed system. This is a system that is operating and has been for some time, and it is a good example of what can be done with today's technology. I quote (with some alterations) from *SDC Magazine:*

" . . . the ORBIT program allows the researcher and the computer to work as partners in the search for information sources. This mode of operation differs significantly from the off-line batch processing mode through which most users of present computerized retrieval systems obtain information reference. Because ORBIT is an on-line system, the researcher communicates directly with the computer. Operational advantages of this mode include:

> "Directness. The user has direct access to the computer.
>
> "Immediacy. The computer response time is something like two or three seconds.
>
> "Flexibility. The user can modify his request—narrow or broaden his search or take off in a new direction—while he is still in contact with the computer.
>
> "Remote access. Users can search the computer memory from their own places of work—a hundred feet or three thousand miles away from where the information is stored.

"The computer on which ORBIT presently runs is located in Santa Monica. Currently, more than a dozen research facilities across the country are authorized to dial the system.

"ORBIT is user-oriented . . . the language of ORBIT is a subset of natural English; input and display is through a teletypewriter. The researcher needs little instruction in the operation of the system and no knowledge of programming to use it.

"Three primary methods of retrieval are available. The user may initiate his search on the basis of descriptors (key words or phrases by which a document is indexed), authors' names (documents with multiple authors can be retrieved on any one name) or subject codes (presently, codes consist of the 22 subject areas defined by COSATI, the President's Committee on Scientific and Technical Information). Further qualification is possible at a later step in the program. For each category—descriptor, author, subject—a catalog is maintained of all entries in the system.

"As an illustration, suppose a user chooses to organize his search for recent findings in space medicine around descriptors. ORBIT makes provision for him to define his field of interest by specifying as many descriptors as is convenient. To make certain he is searching on all the terms by which documents of his interest may be indexed, he might consult the descriptor catalog, or thesaurus. Thus, from his original phrase 'weightlessness,' for example, he would have been led to consider 'hypoxia,' 'space medicine' and a dozen or more additional terms, from which he would select the set most closely describing his interest.

"It can also happen that a user finds one term which seems to describe exactly the information he is seeking. To increase the selectivity of his search, ORBIT allows him to designate this a 'must' term. In the ensuing search the computer considers only those documents whose set of indexing terms contains the 'must' term. 'Must' authors can be indicated in the same way.

"After typing the final retrieval term, the researcher returns control of the program to the computer. There is a brief pause, while some distance away, in Santa Monica, the computer searches ORBIT's data files.

"Suddenly the teletype prints a count of the number of documents that match each specified retrieval term. This list is followed by an instruction to the user to delete whichever terms seem to him, upon reconsideration or evaluation of the returned information, to lead to unwanted references. The program deletes the terms specified, then ranks the documents according to the number of specified retrieval terms they contain. Thus, in the example, he is told that a total of 902 documents match his request, of which 3 are indexed by four of the descriptors he has chosen, 29 by three descriptors, 149 by two and 721 by one.

"To narrow the search, he can further qualify the references by considering only those documents:

> published within a given time period; related to a particular subject area; translated from a given language; issued in a particular form; from a particular laboratory; by a particular author.

Each time he imposes a new restriction, the program prints out the total number of documents that still match his narrowed request and the number that match two or more retrieval terms.

"When the researcher is finally satisfied that his search strategy has isolated a reasonable number of documents within the field, he is ready to stop qualifying and have the computer begin printing out the pertinent references.

"Two decisions remain. How many references does he want immediately, i.e., printed on-line at his teletype? The remainder can be printed off-line. And would he like them printed in full or abbreviated format? The standard format includes the document's location (library accession number, microfilm reel and frame number), title, type, source, date, subject, author, descriptors and number of hits. If he needs only a portion of this information, he may specify the elements he wishes the computer to print.

"Under the present setup, bibliographic references output by ORBIT refer the researcher to complete microfilmed abstracts, extracts and tables of contents of documents included in the system's data base. These are stored in a viewer near each teletype terminal. Parent documents are easily located by accession number in the library. Conceivable extensions of the system include the storage of entire documents either on microform or on computer tape.

"ORBIT can handle as many document references as the storage capacity of the central computer. The present data base contains information on more than 300,000 documents, and system designers estimate that the system could handle 1,000,000 without appreciably lengthening the computer response time.

"The data base tapped by current users of ORBIT contains descriptions of scientific and technical documents. But there is no built-in restriction on the material the system can handle. The internal rules that tell the computer how to carry out the user's commands are independent of the data base. Thus, ORBIT could just as well be adapted to the retrieval of, say, legal decisions, medical reports, community records or specialized collections of books in university research libraries.

"Interactive man-machine retrieval systems represent both a significant step forward and a basis for further development of improved information transfer. The next few years will see ORBIT and ORBIT-like systems providing fast, flexible, direct and geographically extendible information retrieval capabilities to a widening circle of information consumers." [1]

This system is working, and has been for some time. It is used by one of the branches of the Government, which completely pre-empts the computer because they use it so much during certain parts of the day. By July 1, 1968, we will have ORBIT on an IBM 360-67. It will be in such a mode that anyone who wants to put a data base in it can do so and subscribe to the service.

That, I think, is a very advanced system; but it is not a network within my definition, because it has only one node, the one in the 67. To have a true network you would need to have other computers and be able to interactively search their data bases. As far as I know this has never been done. We have had a tie with the TX-2 computer at the Lincoln Laboratory and this has been used as a true network on computational material, not on document handling; but there is no technical reason why this cannot be done. I am not sure it needs to be done myself; it depends on what the user requires. More of that later.

One of the reasons I am not sure that we really need networks, at least as I have defined a network, is because of the nature of the use of documents. You certainly don't need networks for the leisure-time document needs of people. There is no need to make a network for the many kinds of relatively cheap material available. But, many will say, you need networks for highly technical and scientific information. I am not convinced that that is really the case, at least not yet. My reason has to do with the nature of scientific and technical information and documentation, and I would like to consider a little why I came to that conclusion. I want to quote from a document I recently finished, part of which deals with this problem. It is called "Discipline-Oriented Information Services":

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[1] *SDC Magazine*, September, 1967. (Santa Monica: System Development Corporation.)

"Since the needs of scientific researchers tend to be specialized and focused on a limited set of documents, the general solution to the information problem among scientists has been to develop a set of discipline-oriented information services; that is, each major scientific discipline has developed those methods of scientific communication required for workers in that particular area. The policy of the Federal Government with regard to the information needs of scientists is oriented toward supplying those needs through the professional societies. The National Science Foundation has played an essential role in supporting many of the professional societies by helping them to expand and refine their information services. Projections indicate that the National Science Foundation will support the communications services of the various discipline-oriented societies to the extent of over $100 million in the next eight years. Until there is an overall national policy with regard to library and information services, this is probably a sound way to promote the scientific communication effort.

"To present an idea of the extent and variety of the information services of some of the larger organizations, several are here described. Perhaps the largest program being carried out by a professional society is in chemistry. The American Chemical Society sponsors the Chemical Abstracts Service as a resource for the professional and research chemical community. Chemical Abstracts Service's Computer-Based Total Information System is to be in operation by 1971. By mid-1969 CAS will produce all its publications and services through a computer system, and in 1971 CAS expects to provide routine on-line, remote-terminal service. This computer-based total information system will involve tie-ins with primary journals published outside the American Chemical Society.

"Significant parts of the CAS computer system are already in operation. *Chemical Titles*, introduced in 1961, represented the first use of computers to produce a publication on a significant scale. In 1965 CAS inaugurated *Chemical-Biological Activities*, a more sophisticated computer-produced service. CAS has just introduced a third computer-based service, *Polymer Science and Technology*. All three services are produced and used both as printed publications and on magnetic tapes. 1970 should see a complete shift to a direct-access system, with a unified storage and search system in operation. On-line, remote-terminal service should become routine in 1971." [2]

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[2] L. F. Carter. "The Library and Information Service Needs of Scientists" (paper prepared for National Advisory Commission on Libraries, May 15, 1968; to be published).

If you want to know what you can buy today, there is a publication called "Information Services From Chemical Abstracts Service." If you have the appropriate computer, you can buy tapes containing *Chemical Abstracts* and *Chemical Abstracts Condensates,* and you can get the tapes on about one-quarter million abstracts published by CA for around $5,000 a year. If you are in the business, that is cheap; if you are not, as so many libraries (particularly public libraries) are not, it is terribly expensive and you probably can't afford it.

To quote again: "The American Institute of Physics has just been awarded the initial installment of a $1.1 million NSF grant, and has begun a two-year study of physics information needs. AIP is a federation of the leading societies in the field of physics, and currently has a membership of about 50,000. The purpose of the study is to develop a national physics information system. The study will concentrate on all aspects of the transfer of physics information from the producer to the ultimate user. It will identify the various factors which enhance or diminish the flow of this information and will also investigate the utility, complexity, and cost of the channels through which physics information flows. Once these studies have been completed, the AIP will undertake the development of a system based on two considerations: the first is focused on the individuals, groups, and institutions who will be the producers and users of physics information; the second will focus on the system itself. Here the AIP will attempt to develop a system which deals with all aspects of the acquisition of manuscripts and printed materials. It will cope with the intellectual organization of physics information and concepts. Various new information retrieval techniques will be utilized.

"The AIP recognizes that any major change in one of the principal science information services will interact with the services offered in other fields. As a result, they are including a study of interface problems, both with other information components in physics (for example, the abstract activities of the British Institute of Electrical Engineers) and with services from other disciplines (such as the Chemical Abstracts Service, the American Metals Society, and the Institute of Electronic and Electrical Engineers, and their various publication services). Likewise, within the government there are several mission-oriented systems which produce documents related to physics, such as those supported by the AEC and NASA and their abstract services. Problems of compatibility, standards, formats for information exchange, and so forth are extremely important and difficult. Lacking any overall coordination body, each of the societies assumes the individual responsibility to look to these interface problems. It has frequently been suggested that since much of the development in these areas is federally funded, the Federal Government has a larger responsibility than it is currently exercising to assure that these interface requirements are given adequate attention and are solved."

In medicine the situation is quite different. The Federal Government produces the major medical information service for the medical profession, through the National Library of Medicine. Here is a library of 1.2 million books, which actively and aggressively informs people of what is in its collection. It takes a positive role. It publishes *Index Medicus*; it has a bibliographical search activity which it does routinely and also on demand. It is fairly expensive. In 1966, it cost, roughly speaking, about 1.5 million dollars to do the bibliographic service activities and MEDLARS. Of this about ½ million was spent on equipment, about $146,000 on maintenance, supplies, etc., about $700,000 on administration, operating personnel, programming personnel, etc., and about $73,000 on printing and distribution. It costs around $928,000 to put out *Index Medicus,* around ½ million to do the specialized bibliographic searches, and about $83,000 for the regular searches. It costs around 70¢ for each citation in any of these services. Each copy of *Index Medicus* costs about $6.00 to put out. A demand bibliography is about $150, and recurring bibliographies about $1,500.

There is an example of what the Federal Government is doing for one of our major professions; and other professions are demanding similar service, so that they can be kept up-to-date. You can see the cost, and the responsibility, that is implied for the Federal Government, because there is no one other than the Government and the professional societies to do these things. And they seem to be doing them independently, so that no network, at least in the sense that I define it, is being developed.

"The social sciences have somewhat different requirements from the natural sciences. Some of the specialties in the social sciences have had extensive primary and secondary publication services, while other areas have been notably lacking in such services. The American Psychological Association, for example, has for many years published a number of primary journals, 13 journals being currently published. *Psychological Abstracts* has, since the mid-1920's, been a major source of bibliographic service in this area. In contrast, some of the other social sciences have had only a very limited number of primary outlets, and some disciplines have no systematic abstract services. However, the requirements for the traditional research library and documentation services are undergoing significant changes in the social sciences. A recent study by the National Research Council points out:

> 'Some years ago it appeared plausible that maintenance of repositories of behavioral science research data would gradually be brought under the umbrella of the conventional research library in matters of personnel and financing, after the initial innovative phase. Such a possibility is not, of course, to be ruled out completely for the future, but it is already clear that such a future remains distant.

> 'Most data facilities for research are growing up outside conventional library institutions. Few research libraries are adequately subsidized or staffed even to keep up with current advances in bibliographic automation. Pressures to fulfill a new set of roles in the maintenance of archives of machine-readable behavioral science data are understandably greeted with indifference, if not with horror, by research librarians. At this formative stage conventional libraries appear overwhelmed by information revolutions on other fronts. The differentiation between "book libraries" and "data libraries" is likely to persist for some time, and may even harden permanently.' "[3]

The National Research Council Committee said that, I didn't; but I think they are right.

A good many of the new services in this area are commercial services. McGraw-Hill, the Academic Press, The Citation Index Service, and so forth, are commercial services selling their material. And all of this is in a sense outside of the library structure. It seems to me that, while these new methods are being developed by the professional societies, by the Federal Government and by commercial services, and are filling the needs and requirements of particular scientific and technical groups, and in a way filling them adequately, at the same time each group—the chemists and physicists and so on—is going its own way in developing a system that is adequate for its members. As a result, we are not developing true networks, but we are developing extremely capable services for those people who want them. I think we need to think long and hard about whether we really want to develop the kind of global, all-pervasive library network that people tend to talk about (I am afraid rather glibly) without thinking about the problems involved.

Here are the problems as I see them:

Communications—we have an excellent communications system, but it isn't adapted very well to library networks. Rate structures are a part of this problem. The FCC is holding a formal hearing on this, and is asking, what kind of rate structure should there be? who should be allowed to attach "foreign" instruments, that is, those not made by the telephone company, to telephone lines? should you be charged for all the time you are connected, or just for the time you are transmitting data? at a teletype terminal you transmit data for a short time, and the telephone company sends it very rapidly, but you are charged for all the time you are connected.

Can the communication systems themselves operate computer services? Western Union has announced a time-sharing service, but can they assure fair rate structures for the communication portion to its users? As you probably know, there is a suit to stop them from doing this. Likewise, can private companies set up data communication systems between remote cities? One company wants to set up a microwave communication system between St. Louis and Chicago. Can they do that outside the Bell System, or not? These are the kinds of problems that have to be solved in the communications area, and it is going to take a long time to solve them equitably.

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[3] *Communications Systems and Resources in the Behavioral Sciences.* (Publication 1575.) (Washington, D.C.: National Academy of Sciences, 1967.)

Another problem is the problem of standards and formats. This sounds easy; but those of you who have tried to deal with the development of the MARC system, for instance, know how complex this is. When a simple thing like the distribution of catalog cards, which we have been doing for years through the Library of Congress card service, is to be computerized so it will be really useful to a lot of users, it has to be done very exactly—and then the standards and format problem becomes very tricky. Recently I was at a major Ivy League university. I found they don't like MARC II—why? Because it doesn't use their format. So they are reformating the MARC tapes. We are going to have to agree on standards. If you are going to transmit electronically a union list, a thesaurus, or whatever, it has to be done in a given format and with given standards. You have to worry about word lengths, about the number of bits it takes to describe a character, and so on. Then there are all the computer languages—we have COBOL and FORTRAN and BASIC and JOVIAL and so on and on. We need some kind of standard here too.

A third problem is the copyright problem. As you know, a bill has been introduced in two successive sessions of Congress, and both times Congress has decided it does not understand it well enough, and has deferred it. Now there is going to be a study commission to look into the problem. A paramount problem is the question of fair use and xerography in copying. All of you, some people say, are guilty of violating the copyright law every time you allow people to put their quarters in the Xerox machine in your lobby. I am no judge of that; but it is probably going to be decided by a new law and a new series of court cases.

When do you violate the copyright law—when you put a book into your computer data base, or when you display it? Those of us in the computer industry say when you display it, of course, because nobody uses it until then. But the publishers say that the moment it is put into the data base, you have violated the copyright law, if you haven't paid them for it. Also, what programs can be protected by copyright in the computer area? I described ORBIT to you— it is our proprietary program, but suppose I sell it to you. Can you copy it? In theory, we can copyright it. You can change a small part of it and you've probably broken our copyright. This is a very sticky issue and there are no good answers yet.

Fourth, the problem of user requirements. As I have indicated to you, I am not convinced that we really need a large national network as I defined it. This is not to say that we don't need services based on automated computer-based systems; but it is not clear to me that we need a nationally integrated computer network that handles textual information. That is the biggest and most expensive and most difficult. Maybe we will need it some day; but let's be sure we have a user requirement before we build it.

There are, as I have indicated already, the discipline-based scientific and technical services. In this country there are over 200 specialized information services—in materials, in polymers, in electronics, you name it. They are serving a great number of users. Is it really worth while tying them all together? Then there is the problem of bibliographic services. We don't today have a unified national union list, or a national bibliography. Do we want to pay for them? I think you can argue that we probably do, and that computers make it possible to produce them (at least technically we can produce them, if very expensively). But how much use is it to know the holdings of every library in the country? We will probably want to confine this to research libraries and maybe even some subset of research libraries.

Fifth, the problem of technology. The hardware is reasonably adequate today. There are data-based storing devices that allow you to store in the order of a billion characters. There are good, fast disc-storage systems that allow you to store in the order of a quarter of a billion characters. But I do worry about the software aspects of this problem. The writing, the designing of the software, the computer programs, the system configuration, the procedures, the instructions—these are the problems. And we're going to have some big bottlenecks in the logic of the structure of files. Straight serial search is not the way to do it, as we've known for a long time. There has to be a super-overhead structure which indexes the files, and the logic of how to do that is a very sticky problem.

Likewise the problem of whether or not you are going to handle natural language. At SDC we have natural language systems—we have a data base with a million or two words in it, and you can ask a question of it in English and get the answer right back. But with very large data bases, the logic becomes extremely difficult. It is not clear that we can do this for large files yet and I think it will be ten years or so before we can. So the library on magnetic tape, where you can search the text, is a long way away.

Sixth, the problem of cost and capital investment. In areas of applied science like chemistry, medicine, metals, and technology generally, the industries and the professions are willing to see to it, either through the government or through their own resources, that they have an information system. In intelligence, in the stock exchange, in credit information systems—there we do have large, automated data-base handling systems, and they work. But in the humanities, in the social sciences, the required amount of money is not available, and there is the real problem of finding the money to develop the data base for these special subjects. By and large it hasn't been coming, and I don't think it's going to for a long time.

That is one part of the problem of cost. The other part is, where do you get the risk capital to develop some of these very large systems? The capital needed is quite large, in the millions, and unless the Federal government can be persuaded that there is a national need and a national responsibility, I doubt very much that we are going to get the development risk capital. I think some of you know that Dave Hays at RAND has been trying to promote the million-book library on microform. His argument is that we take the million books that ought to be in a research library, put them on microform, and then sell them to the many new colleges, junior colleges, etc. The only trouble is that it costs around 300 million dollars just to get the books into the microform. Who is going to put up that amount of money?

The final problem is the lack of a federal integrative role and policy. In our book on this subject, *National Document-Handling Systems for Science and Technology,*[4] we detail some of the problems of getting a national, well-defined, specific role for the Federal Government. The three major federal libraries—the Library of Congress, the National Library of Medicine and the National Agricultural Library—have formed the National Library Committee to try to coordinate problems among themselves, and this has improved things somewhat. The National Academy of Sciences has a group called SATCOM (the Scientific and Technical Communications Committee), and they're trying to develop a policy which the National Academy can endorse. Another new National Academy effort is the Computer Science and Engineering Board, of which I happen to be a member. We're going to try to work on this problem too, particularly on its technical aspects.

Finally, there is the National Advisory Commission on Libraries. Our preliminary report has been sent to the President—he has not released it yet. We have a much longer, more comprehensive report that is in the final phases. But I don't think—another personal opinion—that we are going to come up with any very adequate solution to the overall federal integrative problem. I believe this is the major obstacle in the way of a total, well-thought-out, user-oriented, integrated information and document system capability, a kind of natural resource that should be available to every serious scholar and student in the country.

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[4] L. F. Carter *et al. National Document-Handling Systems for Science and Technology.* (New York: John Wiley, 1967.)

ADDRESS, "PARTNERSHIPS IN CALIFORNIA: HOW CAN BOOKS AND INFORMATION BE MOBILIZED FOR EVERY CALIFORNIAN?"

Raynard C. Swank, *Dean*
School of Librarianship
University of California, Berkeley

We are talking today about partnerships among libraries of all kinds for the advancement of the public interest—the public interest, that is, in information. A bit later I want to touch upon our present partnerships in California—partnerships among school, public, and college libraries, and the more specialized information centers, such as those of business and industry—and about where we go next; but first I want to say what this commodity that we call "information" is and why it is important. How is the public interest involved?

The word "information" is itself a hang-up between old-line librarians and the new information scientists, because neither will recognize what the other means by it. It's a fighting word. If you will forgive a bit of simple-minded generalization, let me say what I think the commodity itself is, by whatever name it is called.

Dr. Raymond C. Swank

From primitive times people have learned things and passed on that learning to succeeding generations. A lot of it has been forgotten almost as soon as it has been learned, and has had to be learned over again, sometimes over again many times, if it was worth learning in the first place. What we call, very loosely, our culture may be viewed as that part of the total learning that is remembered, and accumulated, and passed down to us today.

This culture is many different things. My dictionary says that "culture" includes "the concepts, habits, skills, arts, instruments, institutions, etc. of a given people in a given period." This covers about everything in our lives. The way we hoe our potatoes, or spend Sunday afternoon, or manufacture television sets, or conduct political campaigns, or shave in the morning is all part of this accumulated, remembered, and transmitted culture. Much of it is so habitual that we often don't recognize it for what it is, but it is the very fabric of which our lives are woven.

We learn this culture in many different ways. We learn it from our parents, teachers, professional colleagues, and friends. It is transmitted to us through churches and other social institutions, through everyday manners and customs, and by means of folk tales and the arts. Radio and television have become major media for its dissemination, and it is available to us in various written or other documentary forms—books, journals, films, magnetic tapes, etc. But the commodity itself—this thing we call "information"—is the totality of the residual, or remembered, learning that makes up our culture in all its ramifications—literary, artistic, social, scientific, and technical—regardless of the sources from which we learn it.

Now, libraries and information centers are particularly concerned with that part of the total commodity that has been recorded in some way, and can therefore be collected, stored, arranged, and found again, even after long periods of time, when but for the record it might have been forgotten. I don't know what proportion of the total learning of a people would be forgotten without the record—the anthropologists might be able to tell us—; but I do know that advanced cultures are distinguished by their dependence upon books, journals, archives, and data banks as sources for the recall of information that is not carried in mind. The record, as has often been noted, is an extension of the memory, both of individuals and societies; and the more advanced the society, or the greater the totality of learning, the greater is the dependence upon the record. The mission of libraries, as the institutions to which society has entrusted the record, is to insure that this residual, and ever increasing, part of the learning of mankind that is "remembered," so to speak, by means of records, is in fact preserved and made capable of recall at future times upon demand.

For technical purposes, "information" is sometimes defined abstractly as signals, or symbols, and the library is conceived as a system for the transfer, or exchange, of messages defined in mechanical terms. I have no quarrel with this perception of the commodity, insofar as the engineering of information systems is concerned. I do remind you, however, that the social mission of library and information systems is still rooted in the content, the substantive meaning, of the messages, and that the commodity itself is a significant chunk of our culture.

Indeed, so basic to our culture is this commodity—recorded information—that it is coming to be viewed as a public resource, to which all individuals and communities should have equal rights of access. The records—that is, the documents themselves—may be privately owned, as by colleges and business concerns, but the information in them is not so owned. The text of a book may be copyrighted, but its information content is in the public domain as soon as it is read. No matter who owns the text, or copies of the text, the content is a contribution to the general resource. The public interest requires, I believe, that scientists, craftsmen, laborers, teachers, and businessmen everywhere be entitled to its use.

I do not mean by this to suggest that library collections should be leveled, or socialized. Here again, let us distinguish between books as records, and the information content of our culture, which may or may not be recorded. The fact that some part of it is recorded does not remove that part from the public domain. Let the books, as property, stay where they are, but let everyman stake his claim to the learning that they preserve.

The democratization of recorded information as a public resource might even require that library and other information systems be formed in due course into public utilities—that they be linked together, like telephone systems, in such a way as to provide all communities, more or less uniformly, with the necessary access to information. The library utility would, on the one hand, harness the information content that is stored in library collections, wherever they may be, or whoever may own them, and would, on the other hand, provide the means of wide public dissemination of that content.

Whether such a utility should be publicly or privately owned, I could not guess; perhaps it should be both. But the federal interest in equity of access to information has already become manifest in several ways, including the planning of national information networks and of cooperative systems among college and university, public, school, and special libraries. There is manifest the desire to insure that federal funds spent for library purposes, whether by cities and counties, academic institutions, or industrial research laboratories, do in fact accrue to the general public interest.

If library systems were to become public utilities, dramatic changes in the popular conception of individual libraries would be required. We tend to think of libraries as separate, desirably self-sufficient collections of books, or other documents, that contain most of the information needed by the community that is served. The reader often has no great trouble finding his way around these limited collections, and if, occasionally, something more is needed, the librarians can get it on interlibrary loan. The library is conceived only marginally as an inlet from the more inclusive public resource, as I have described it.

I realize that the need of access to greater external resources may be presently unfelt and that, even when felt, many people would not think of the library as a place to satisfy it. For one thing—and this, I think, is crucial—there is no way for the local library to tell people, quickly and surely, what external resources are available on particular subjects. It has a subject catalog of its own, and a more or less spotty selection of indexes and bibliographies. If there were a union catalog for the region, it would usually be somewhere else, and it wouldn't analyze resources by subjects anyway. The local library is simply not an effective source of information about what is available beyond its own four walls. For another thing, even if it could tell readers what is available, it could not produce from afar the records themselves with any reasonable promptness. So, the general public resource is, for many practical purposes, neither discoverable nor recoverable from individual libraries on the front lines of service.

Within a network viewed as a public utility, the local library would be conceived primarily as an analytical, evaluative, individualized outlet of the larger information resource. For economic immediacy of access, the library would continue to strengthen its own collections, but its purpose, its content, and its services would be redefined with significant reference to external collections. It would try to do justice to both the magnitude of the public resource and the magnitude of the public need by becoming dependent outlets of state and national networks.

To put it another way, the right of access to the total resource requires that the library system do a great deal more for the individual citizen than has ever been expected of it before. While the resource grows apace, the ability of the individual to assimilate it, even in small specializations, stays about the same. A man can still read only so many books in a lifetime, and he can still keep up with only so many current journals. For the rest, he is dependent upon the library. His access to the total resource depends increasingly upon information systems to identify, organize and sort out for him what he can no longer sort out for himself. Similarly, the individual library's ability to acquire for its own collections whatever part of the total resource is needed, or would be useful, to its clientele also decreases. So, the library, like the individual, only one level re-moved, depends also upon larger systems to sort out for its community the overwhelming proportion of the total resource that neither it nor its individual readers can assimilate.

Here are three perspectives, then, that we should keep in mind as we think about partnerships among libraries. First, the commodity that we are concerned with is not just an array of local libraries and information centers; it is the rapidly increasing part of our total culture that is preserved, and can often be recalled only, through books and other records. Second, this commodity, in its totality, is a public resource to which every citizen should have equal rights of access, regardless of who owns the records themselves. And third, such access would require, on the one hand, the creation of library and information networks, perhaps viewed even as public utilities, for the comprehensive organization of the total commodity and, on the other hand, the reorientation of local libraries from independent, more or less self-sufficient services to more highly dependent, selective outlets of the networks.

Now, what is our present condition as viewed in the light of these perceptions? In regard to the total resource, it is clear that the vast majority of local libraries in California are extremely limited, particularly the smaller public and college libraries. In all the libraries of California, over 2,000 of them, we can identify a total of 59,000,000 books—7,000,000 in high school libraries, 20,000,000 in college and university libraries, 5,000,000 in special libraries, and 27,000,000 in public libraries.[1] These are large totals, but they represent to a large extent the *same* books duplicated many times over. The number of *different* books or titles would be a small fraction of those totals. Most of the unique resources are probably owned by a few large university and special libraries, such as those at Berkeley and Stanford; but even these are small compared with the total resource. At the national level, even the Library of Congress is now trying vigorously to extend its coverage particularly of the records of foreign cultures. There is still a long way to go before the total resource is brought under control at the national, let alone the state and local, level.

In regard to equity of access, our condition is very poor indeed. The resources locally available vary tremendously from one part of the state to another. The great Los Angeles region has 43 percent of all the books in California libraries, and the East and South Bay region has 31 percent, the two totalling 74 percent. In sharp contrast, the North Mountain Region has one percent, the Lower San Joaquin Valley has three percent, and the Santa Barbara Coast has 4.5 percent. Yet the individual students, businessmen, and engineers in Chico, Fresno, and Ventura have every bit as much need of the total resource as those in San Francisco or Los Angeles.

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[1] Raynard C. Swank. *Interlibrary Cooperation Under Title III of the Library Services and Construction Act; a Preliminary Study for the California State Library* (Sacramento: California State Library, 1967), pp. 7–14.

The existing interlibrary lending services do not, moreover, compensate effectively for the disparity of collections. The services are slow, but, more importantly, as I have already emphasized, the people in most communities have no way to find out what resources exist outside of their local libraries. The ability to discover what is available, through subject catalogs, bibliographies, and indexes, is a pre-condition of access to the records themselves. Interlibrary lending continues, therefore, to be a marginal service based on information that, for the most part, has not been supplied by the library but has been picked up from other sources by the reader.

In regard to the creation of library and information networks to extend and equalize the people's access to the public resource, California has made a good beginning. County library systems were pioneered in California. With federal and state aid, thirteen multi-public-library cooperative systems, serving over seven and one-half million persons and involving 82 separate libraries, had been established by May 1968. In addition, seven large single public library systems serving close to seven and one-half million more persons had been established under the California Public Library Services Act (the state law which authorizes state financial assistance to public library systems), by the same date. Within the areas served by these systems (71,758.02 square miles), communications among libraries are being improved, union catalogs are being compiled, interlibrary lending services are being speeded up, and regional centers are beginning to function as outlets to, and inlets from, the State Library and other major repositories of the public resource. Various cooperative arrangements have also occurred between school and public libraries, public and academic libraries, and academic and special libraries, but the major development so far has been the public library cooperatives.

There is still a long, long way to go, in several respects. First, the regional public library cooperatives, helpful as they are, sometimes can mobilize only a number of small libraries in sparsely populated parts of the state. A dozen weak libraries, added together, do not necessarily make a strong one, and there remains the problem of access to the larger public resource. Second, in some regions not even the academic and special libraries would add very much, even if they also joined the cooperatives. The regions of California that are poorest in public libraries are on the whole still poorer in academic and special libraries. Third, while these cooperatives can, and do, call upon the larger public resource, the statewide networks that should back them up are not yet well organized. The medical, agricultural, and law libraries, for example, have not yet formed themselves into cooperative systems, and the great academic research libraries, for lack of safeguards to their own clienteles and of financial compensation, are still wary of opening their resources widely to the public. Fourth, even if these major research libraries were more widely opened for public access, we do not yet have the means of making their contents known at local points of service; their subject catalogs cannot be readily consulted. Fifth, even if there were local access to the catalogs, the local library staffs might not yet be prepared, in confrontation with the full mass of the available resources, to help readers by analyzing their individual needs and sorting out of that mass the particular records that would best serve their purposes. Again, access to the total public resource would require local libraries to provide vastly more critical, analytical, and selective services than have yet been dreamed of. The whole monolithic structure of a national information network could wash down the drain if the regional and local outlets, where all readers must contact the system, were not reoriented and reeducated to responsibilities far beyond those of building and tending their own, hopefully sufficient collections.

As we look now to the future, it is difficult indeed to see how the job can be done—the job that really ought to be done—: the comprehensive control of all learning that survives in the collective memory of record, the democratization of access to that record, and the provision of analytical, evaluative, local services that would enable people to recall from that memory whatever might be needed. I suppose we dare to dream of these things only because of the extended powers for manipulating information that are promised by electronic data processing. We confidently hope that the wonders already worked by this new technology in business, science, and war will also be capable of alleviating the much more complex problems of the library—that is, the organization and dissemination of our cultural heritage in its almost infinite ramifications.

I am hopeful. We have a research institute at Berkeley and UCLA that is grappling with several down-to-earth possibilities. By now we suspect that not for some time will the total presently recorded information resource be controllable in computer memories. The resource itself will stay right where it now is—in libraries and other information centers. But the bibliographical control of the resource—the record of the records, the catalogs and indexes to them—do now appear capable of being processed by computers. This means essentially that the knowledge of existing resources, and the analysis of what is in them, can in the near future be much more widely disseminated than ever before. The promise is that national and state processing centers—that is, centralized cataloging and indexing agencies—can soon produce very comprehensive, highly analytical guides, or road maps, to the total information resource and reproduce them, or any desired part of them, by region or subject, for wide distribution in book form to regional, and possibly local, library service points throughout the state. At a later stage, it should become possible to consult the central catalogs directly from local computer terminals.

Another new technology—telefacsimile transmission of texts—promises in due course to speed up the delivery of needed resources from wherever they might be found to local service points. The combination of local access to the knowledge of existing resources through computer-produced catalogs with local access to telefacsimile copies of those resources would be powerful indeed. Yet a recent experiment conducted by Berkeley's Institute of Library Research with telefacsimile transmission showed that, while such transmission is already practical, hardly anybody is really in so much of a hurry for his interlibrary loans as to justify its extra cost. While access to the knowledge of available resources is terribly important, the delivery time of copies of those resources appears, for the present at least, to be much less important.

So, we do look hopefully to the computer technologies for help. But, as an old-line librarian, I would remind you that these technologies, and the information networks that should arise from them, could pay off only through the state and regional library systems; and these are systems that should be created anyway, technology or no technology. Nothing will happen in any case until the goods are actually delivered at the point of local service—in Petaluma, Placerville, Barstow, or where you will.

As you should guess by now, I do have a vision of the future—a future in which the learning of mankind, insofar as it has been written down, is readily accessible to all people. Let me assume that control of that learning *will* be achieved at the national and international levels—this is the topic of other speakers at this conference—and say what should be done in California.

First, the regional library cooperatives in California should be strengthened, and additional cooperatives established to blanket the state. The libraries in these systems should be encouraged to shake off old parochial habits and to experiment boldly with new communication methods, union catalogs and other bibliographical services, rapid delivery services and telefacsimile, reference centers, centralized procurement and cataloging, and the mechanization of catalog production and circulation control on a system-wide basis. These actions should not only produce immediate local benefits but should also prepare the way for the future, when these cooperatives will become the grass roots outlets for statewide and national information networks.

Second, other types of libraries should be cut into these public library cooperatives—the school, the college, and the special libraries. While in some regions libraries can add little strength, in others they can add a great deal. When proper constraints are applied, joint action among different types of libraries should raise no threat to the special interests of the clienteles served by the non-public libraries. On the contrary, a library can minister fully to those interests only if it recognizes that their range and depth often extend far beyond the collections locally available.

Third, specialized research libraries should be encouraged to form cooperative systems of their own, not on geographical but on subject bases. The scientific, technical, and other specialized resources of the state can probably be mobilized most effectively, even for service to the regional cooperatives, by organizing medical, agricultural, chemical, physics, law, and other such systems, which can hook up directly with national networks in the same disciplines. A medical cooperative, for example, might include the bio-medical libraries in California universities, hospitals, public health agencies, and commercial research laboratories.

Fourth, contracts should be arranged with the great university libraries for statewide service through the regional and subject cooperatives. Forty-two percent of the books in all of the academic libraries of the state are in three universities: Berkeley, Stanford, and UCLA; and this total might include as much as 75 or 80 percent of the *unique* resources. If recorded information is in fact a public resource, and if people in general have the right of access to it, then these extraordinarily rich libraries must be enabled to serve the public interest far more widely than before. This can be done, I think, without detriment to the students and faculties, provided: first, that requests are screened by the regional and subject cooperative before being sent to the university libraries; second, that a separate service organization be created to handle the external services, in order that they not fall upon the organization that serves the students and faculty; and third, since reciprocal services in kind would rarely be possible, that the universities are reimbursed in full, not only for the direct costs of external services but also for a reasonable share of the larger cost of building and maintaining the collections themselves—that is, for simply having them there and ready for use. Large research collections, such as these, have low densities of use, and I think it entirely feasible for parallel service organizations to exploit the same collections, particularly now that photocopies can often be supplied and the books themselves kept at home.

Finally, the role of the State Library as the central planning, coordinating, and contracting agency for the library systems of California should be greatly extended. Traditionally, the State Library has been concerned, among other things, with the development of public library services throughout the state. It should now be equally concerned with the development of inter-type-of-library and subject systems that include school, college and university, and special libraries as well as public libraries. It has the legal status, it administers both federal and state aid to libraries, and it has already established a statewide union catalog and processing center, which, it is hoped, will soon be mechanized. The State Library should build as rapidly as possible its capability as the nerve center of all cooperative library systems in California. No other agency has, or is likely to acquire, the breadth of authority and responsibility that is called for by this impressive job.

In conclusion, I think we should acknowledge that the creation of library utilities for the comprehensive control and selective dissemination of the public information resource depends upon society's down-to-earth perception of its need of that resource in relation to its cost. Our present library services represent not so much the imaginative, or unimaginative, labors of librarians—whichever bias one may hold—as the kinds and levels of services that society has decided, over the last century or so, are worth paying for. Present library budgets perpetuate that tradition; they are not calculated to create new types or higher levels of service. Yet there is increasing evidence that a new perception of the library problem is gaining wide social acceptance—a recognition that access to information is becoming crucial to the health, the welfare, the security, and the further advancement of society. There is a growing willingness, for example, to spend huge sums of money on scientific and technical information, lest we lose control of it with disastrous results. I would guess that so far we have seen only the beginning of the problem, and that the problem will get much worse before it gets better. The computers won't save money, but they might save us, provided we are willing to build from the bottom up, as well as from the top down, the library partnerships that are necessary to exploit them.

ADDRESS, "TOMORROW'S LIBRARY SERVICES TODAY"

Joseph Becker
Director, Information Sciences
Interuniversity Communications Council (EDUCOM)

You will be interested to know that I entered the field of Information Science by mistake, and what is worse, the mistake of a machine. When I graduated from Fort Sill, Oklahoma, as a young lieutenant, the Army punched my qualification card with the information that I could speak, read and write Japanese; actually, all I could do was speak, read and write the Japanese number and date system, which I had learned as a page boy in the New York Public Library. But it was this error which put me into a military assignment where I was responsible for a library and for several punched card machines. That accident happened about 25 years ago, and libraries and machines have colored my career ever since. This morning, I wish to describe to you some of the ideas which have led to the current interest in library automation.

Mr. Joseph Becker

We really should go back to the time of Herman Hollerith, the inventor of the punched card, to begin our investigation. If you read his biography, as I did, you will note that Hollerith credits a librarian with the original idea for the punched card. He says, "I was having tea with Dr. B. one day, and he told me that there ought to be a machine for doing the purely mechanical work of totaling population and other statistics." The Dr. B., in this instance, turned out to be Dr. John Shaw Billings, the Army Surgeon General's Librarian who later became the director of the New York Public Library when the Astor, Lenox and Tilden Foundation collections were combined.

So if, as librarians, we are looking for a little automation history, we can go back to 1880, and find Dr. B. making a suggestion which has helped bring us together today. After 1880 there began a parade of interest in mechanical aids for libraries—from Melville Dewey's activity with the typewriter to Don Coney's first library automation grant, given to a young man named Ralph Parker, in 1930. Both Coney and Parker worked for the University of Texas Library. Parker asked for a grant to apply the punched card machines in the bursar's office to the problems of circulation control. Coney generously gave him $300, the first grant for library automation, telling him to spend his money wisely, which Parker did. Since then, many other librarians have been experimenting with machines, trying to discover their utility in library operations.

Until five or six years ago most of this machine experimentation was concerned with the housekeeping functions of a library—circulation, acquisitions, serial records control, even book catalogs. The first machine-produced book catalog was devised and published by the King County Library in Seattle back in 1951. So, there has been a steady interest in machines, but such interest has been directed more to housekeeping purposes than to reference and information retrieval.

What prompts our interest in machines in libraries? The first reason is, certainly, the publishing rate, which over the past ten years has been commonly referred to as the "information explosion." The daily outpouring from our printing presses continues to increase, and the future rate doesn't show any signs of decreasing. A second reason for our interest is, there are more people to be served as the population continues to grow. The effect of our population explosion will definitely change the future role of the library as a social institution.

Finally, there is the new media. We haven't heard it mentioned very much this morning, but printed materials are not the only resources concerning libraries these days. We are interested in audio information, such as oral histories and the like; we are interested in collecting videotapes, which are becoming more and more available; we are concerned with films, in the form of slides, of microform, and of 16mm films. The newer media is but another example of a pressure or force driving us to consider further uses of technology.

Certainly our lives are more complex these days; therefore, it is natural that we seek new ways to facilitate the work of our profession. Here, again, technology seems to suggest the promise of an answer. More people are generating greater quantities of information, and, at the same time, the rate of change of information is also increasing. Therefore, today, waiting eight months for something to appear in print simply widens the gulf between research and practice. We are looking for ways to narrow this gulf.

Information resources in this country, as Ray Swank pointed out, are not uniformly distributed. The historical pattern has been to acquire materials, organize them systematically, and then invite the local clientele to use the resources of the library. With the diffusion of our population to different parts of the country, people are no longer physically located near the information resources which they need. Ray's point in giving you the unequal distribution percentages throughout California makes this point clear. There should be a better way of making our total information resources available to everyone, regardless of his geographic location.

Technology can supply those needed techniques to facilitate the distribution of all kinds of information. Ray coined the word "democratize"; I think it is a very good one. Through technology, we may be able to make information, books, the contents of videotapes, and so forth, more uniformly available to the constituencies we serve. In this service, both computers and communications are destined to play important roles; the computer by providing faster and cheaper manipulation of data; and communications by providing the distributive capacity for computer output and for other forms of information.

The computer has been with us for 22 years, but it wasn't until very recently that its role as a member of the information family became readily apparent. I think this new role is due to the engineering development which has turned the computer into a communications device as well as an information processor. The computer specialist uses the word "interface" to describe the interaction between computers and communications (by communications, I mean the standard communications we are accustomed to: the telephone line, the telegraph line, the radio, etc., as well as some of the more advanced forms). It is this interface between the computer and communications that fascinates the information scientist. Today's third-generation computers possess this interface capability. The newest machines not only manipulate and perform logical operations, but also send their results to a distant point. Furthermore, persons located at that distant point can also communicate or "converse" with the computer. The time-sharing systems, described this morning by

Dr. Carter, provide the capability for remote access to and interaction with a computer from long distance.

Regarding the computer's interface with communications, it should, first, be pointed out that the communications we enjoy in this country were originally designed for the telephone system some 42 years ago. They were initially intended to carry voice communications, not the data of the digital computer, nor the teletype, nor the output of a video camera. (None of these new types of data were taken into account in the original design and engineering of the telephone network.) Yet, today, we are using this network for the distribution of information generated by many new machines. Thus, there is an inefficient use of a system, designed for some other purpose.

Recognizing this fact, and realizing the amount of data expected to flow over our voice communications lines by 1970, Ma Bell believes we will actually be distributing more data than voice communications over telephone lines by 1970; this is, indeed, a rather astounding fact. Aware of the coming communications crisis, AT&T and Western Union are building wide-band communications highways throughout the country. Communications people refer to telephone lines as a narrow-band as opposed to a wide-band system. You can, literally, think of a telephone line as a very small-diameter pipeline. Because the computer can disgorge tremendous quantities of information at very rapid rates, data must be squeezed through the "narrow pipe" effect of a normal telephone line. Obviously it will take a long time for such information to get from one point to another. Therefore, wide or broad-band communications facilities are being planned for use throughout the country. They will permit the language of the TV camera, the facsimile scanner, the teletype machine and the computer, to flow back and forth with the same ease as voice communications have travelled in the past.

The new wide-band facilities would be a different set of pipelines. Today's individual telephone wires, which crisscross the country, connect 100,000,000 telephones; however, each phone is not connected to every other, as I am sure you realize. As Dr. Carter described earlier, trunks and switching stations make it possible for our present system to identify and reach the one particular telephone we are calling. This same facility, to switch, find and connect, will be available with the new broadband communication pipelines.

Microwave and coaxial cable are two particular types of broadband communications. Cable can carry many times the capacity of narrow telephone line. Microwave is a sort of radio-type communication which provides for an even wider pipe-effect in the transmission of video information. One of the factors holding back telefacsimile (video) development in today's libraries is the time it takes to scan a printed page and to send the many lists of information over telephone lines to a distant receiving location. We pay for that time in long-distance phone rates. However, broad-band highways of communication, as represented by coaxial cable and microwave, will permit us to rapidly send large quantities of material from one point to another across the country.

Satellites are yet a third type of broad-band communication. Today there are two satellites circling the globe for civilian communications purposes, and a third is to be launched in September by COMSAT. Together these three space packages will extend communications to every point on earth, except for the North and South Poles. I was in Europe recently and heard Dr. W. J. Bray, who is in charge of the British end of the Early Bird satellite system, describe satellite operation. In addressing a group of librarians, Dr. Bray tried to stimulate their imagination by pointing out that the Early Bird is launched by rocket, and placed in an elliptical orbit. (I have seen the Early Bird satellite up close. It isn't very big—seven feet in diameter and about two feet high, coated with solar batteries which receive energy from the sun; and a rabbit-ear TV antenna that looks like the one on top of my television set in the recreation room.) After it gets into such an orbit some 22,300 miles out, the satellite is fired into a circular orbit around the equator. As the space vehicle circles the earth, it moves faster than the earth's rotation, but relative to the earth's position, it is stationary. The capability for directing transmissions from earth are, thus, facilitated by this stationary characteristic. The satellite uses a small amplifier to regenerate the transmitted signals from earth and to send them back to another point on the earth's surface. Antennas, such as those at the British station, receive the satellite's signals and retransmit them over ground lines to their final destination.

Domestic satellites, which will distribute educational and noncommercial information, are being planned for the United States. For example, the Ford Foundation and the Carnegie Institute have domestic satellite programs under consideration. Some of these new communications satellites may also distribute information directly through a satellite to an antenna in the home or office. The Hughes Aircraft Company is building such a vehicle at the present time, called a "direct communications satellite."

These are examples of communications developments. Earlier, I described the computer's interface with communications; now I'd like to discuss remote access.

The concept of communicating with a distant store of information can best be understood by referring to today's airline reservation systems. When you step forward and ask for an airline reservation, the reservation agent enters your request in a device which is connected, through communications, to a computer at a distant location. He indicates the flight you want, which day you wish to go, the class of service, and so forth. The computer may be simultaneously "on-line" to as many as 500 reservations agents. Each terminal in the system is swept by a communications subsystem at a speed of many times per second. At Sacramento, for instance, the subsystem would pick up an increment of voltage characterizing your particular request. This signal is transmitted to the computer which performs the requisite logical processing. If there are 19 seats on the flight, and yours is the 18th request, the computer will send an increment of voltage to the Sacramento reservations agent. A green light on his keyboard will light up, advising him that you have a confirmed first class reservation. On the other hand, if there are 19 seats available, and yours was the 20th request, an increment of voltage would light a red light, indicating your reservation cannot be accepted. This is a relatively simple system, but it does indicate that you can take a collection of information, called a "data base," locate it in a particular spot, and then, through communications, provide limited service to a multiplicity of users. In an airlines reservation system, the universe of information is small. The system's data base possesses nowhere near the subtleness and the breadth of information that we have in our libraries. I described it only as an example of the capability which we have today.

At "Library U.S.A.," in ALA's New York World's Fair exhibit, we succeeded in providing bibliographic information on a limited store of information regarding topics of interest to the U.S. Exhibit. Anyone with a teletype machine, located anywhere in the country (and we had several hundred such requests emerge during the course of the exhibit) was able to interrogate the computer and receive a selected bibliography. *Encyclopaedia Britannica* provided translations of essays on 75 topics, in Spanish and German, so that an inquirer, located away from New York but possessing a teletype, could request a German translation of a particular essay on a specific subject. This translation was not a pure "machine translation," but merely the storing and printing of German and Spanish translations of the different essays.

Another example of the use of remote communications in the computer world is the transmission and receipt of digital information. With the development of "Project MARC," it becomes quite feasible to consider the possibility of having MARC-type information (that is, cataloging information we normally find on the 3 x 5 card) stored, in machine readable form, (i.e. digital), at one location, and then possessing the capability to interrogate such information from a distance for a variety of library purposes. Such an operation would be the communications equivalent of using the LC proofslip service which exists today.

The storage of audio information and the ability to communicate with it from a distance is another growing area of interest to libraries. In Washington, D.C., for example, there are some 30 different "dial-a-message" services offered to the public. You can listen to the Democratic Party saying for the day, to a message from the Office of Economic Opportunity, to President Johnson greeting a dignitary at National Airport, or to Vice President Humphrey talking about a timely topic of national importance. The messages change daily. AT&T does not have an accurate count of similar audio information-type services located elsewhere in the country, but I have a feeling that the list is growing more and more extensive. For certain limited applications the good old-fashioned telephone can be used as a "console" to obtain information from a distance.

At the University Hospital in Madison, Wisconsin, 100 physicians developed a medical tape recording library. I mention this, by way of example, because I think it has a wider applicability. Dr. Thomas Meyer persuaded 100 members of the faculty to record, on audio tape (the same kind of tape we use for our stereo systems at home), four to six minute commentaries on various medical subjects and procedures. These tapes are listed in a brochure which is distributed to all physicians in the State of Wisconsin. A doctor in Appleton who wishes to learn something about hypertension in children can check the list and telephone the University Hospital at any time, day or night. A young lady at the hospital will answer the call and play the requested tape. The inquiring doctor can, thus, listen to a specialist's report on a particular aspect of medicine. The specialist closes his message, incidentally, by giving his name and his home telephone number, so that the calling physician can reach him for further consultation. These tape messages are changed as often as the faculty member feels he has something new to communicate to his colleagues.

The call is a toll-free call, another advantage of the new communications systems that are available today. "Wide-area telephone service" permits the user to pay by the month rather than by the call. In Madison, the University Hospital pays for the line and accepts any number of incoming calls. The medical tape recording library has proven so successful in Wisconsin that the hospitals in the four surrounding states are developing their own "Farmington Plan" for audio tapes. Faculty at the other four state universities will prepare audio-commentary cartridges on a list of topics agreed upon by five participating hospitals. These cartridges will then be exchanged, giving each hospital a 500-cartridge library which will provide a much wider range of medical subjects.

Tape cartridge libraries are a very interesting concept because the audio library is as convenient to use as the telephone. The touch-tone telephone is, in itself, a remarkable innovation. It has square push-buttons instead of the old rotary dial, and each button produces a distinctly different tone when you depress it. The tone for number one differs from the tone for number six or number eight. When you call a distant location, you can continue to send information over a connected line by selectively depressing the buttons. If the party at the other end happens to be connected with a computer, the machine can receive this digital information and perform useful work.

I tried this recently. AT&T has what they refer to as a "Voice Answer Back System" that is connected to a computer located in Cooperstown, New York. I was given the computer's telephone number and made the call from a touch-tone telephone in Denver. A return "beep" advised me that I was on line to the computer. I entered the number "1", which advised the computer that I was going to send an addition problem; then I entered the numbers "111" and "222", which were the two numbers to be added. A charming voice responded immediately, with the numbers "333, thank you." No magic here. What AT&T had done was to locate, by address, the numbers 1–50, along with phrases such as "thank you" and "goodbye" and "next question please" and "repeat please," on a magnetic drum. When the computer received the numbers "111" and "222", it performed the logical process of addition, produced the answer "333", and then composed a voice response message by combining selected appropriate phrases from the drum.

Here then, is an example of how the telephone can be used to send and collect information processed by the computer. To me, it is terribly exciting to think that the home telephone will someday have the power to retrieve information from a distance. By the way, the response need not be in voice form. The computer could have responded through a teletype machine or some other printing device. As I said before, output from the computer is digital and thus capable of driving many different output machines.

For libraries, the touch-tone telephone may be used to retrieve a bibliography on a particular topic, or collect other information that is topically organized. The physician who calls the University of Wisconsin cannot dial to get the cartridge he wants, automatically, but that's coming. Ampex, here in California, is developing equipment that will make it possible for a doctor to remotely engage the cartridge he wants to hear by depressing the right buttons on his touch-tone telephone. Universities are already offering audiotape systems which teach languages and other subjects.

There are also "dial-access systems" that bring video information from a distant store to a requesting location. Oklahoma Christian College and Oral Roberts University are two educational institutions, among others, which are using this technique. A student at a carrel has remote access to a computer, to videotapes, to an audiovisual collection, or to magnetic tapes for language-learning. These study areas are being called "hot" or "wet" carrels to distinguish them from the familiar "dry" carrels in most libraries. Cathode-ray tubes in "wet carrels" permit students to see a small film strip or to look at information circulated to them across closed-circuit television by their professors.

I have attempted to give you some very practical examples of existing systems for information distribution; not only the information of the computer, but also of audiotape and of videotape as well.

The use of such systems is certain to become more popular, and I hope that, as librarians, we will embrace the newer media with the same affection as we have for print.

Now, a word on the subject of networks. Libraries are certainly looking to the day when information, in all media, can be integrated into one network system. Networks with broad-band communication highways will permit us to achieve this objective. The alternative is to build multiple communications systems to handle the different forms of data. Your state, and others, are planning and building large-scale microwave relay stations for the transmission and distribution of education materials. Since many educational television networks are being used only eight hours a day, the remaining time could be used for telefacsimile transmission or for the distribution of other kinds of information between libraries. In fact, communications leaders, like RCA, are experimenting with a new method of sending information over standard broadcasting systems which interleaves the information message into the "black space" between TV frames. Our eye doesn't see this black space because the frames are presented to the screen at a rate of thirty frames a second in order to avoid flicker. The wasted space in a TV transmission system is, thus, used for the transmission of data. This application is a fascinating idea and one which will eventually lead to the distribution of video information to homes, where the TV set possesses its own address or unique number, like the telephone. In addition, the ability to integrate multimedia information into a single system suggests the possibility of having information flow back and forth between libraries which share a common interest. As Ray Swank pointed out, libraries are changing roles from passive receivers of information to active distributors.

Many different service points can be reached by a network. A network, properly organized, can give an individual in Barstow the same access to information as an individual in Westwood, close to UCLA. Such a system implies a more uniform distribution of information resources throughout a region, a nation, or, for that matter, even the world.

Traditionally, libraries have followed the philosophy which supports local self-sufficiency. Libraries compete for resources and replicable collections. Economics, however, suggests that this old approach is impractical. Certainly, we must find some way to provide local resources to satisfy local needs and yet protect these resources. However, we may also wish to tap specialized resources at different locations; such access can be achieved through network communication.

Recently, I finished a chapter on information networks for the *Annual Review of Information Science and Technology*. It provided me with an opportunity to survey network developments in this country. I was astonished to discover how much was and is going on. The field is alive with network activity, in education, libraries, government, business, and industry. The concepts of integrating the distribution of multi-media information over a single channel of communication and of using the distributive capacity of this system for library service are quite popular. Libraries are becoming network conscious.

Now, a network can be generally regarded as an interconnection of things, systems, or organizations. Adding the word "information" to "network" defines the system with a little more precision. If I were to restate Dr. Carter's definition, I would say that an information network exists when two or more participants engage in a common pattern of information exchange, through communications, for some functional purpose.

In literature, there are three ways in which authors describe networks. One technique is by class of equipment: the telephone network, the radio network, the teletype network, the facsimile network, the computer network. Another description is by the form which the transmitted data takes: an analog network using the language of the video camera; a digital network using the language of the digital computer or the language of the teletype machine. A third means of description is by functional purpose: a library network, a biomedical information network, an agricultural network, a management-type network.

There are four ideal characteristics which a network should possess. The first feature is *formal organization;* this term means more than just lip-service cooperation among participants. The network must be a contractual relationship. Each participant should possess a sense of responsibility in belonging to the compact, and, in addition, a sense of willingness to accept a financial commitment. Ray mentioned a few of the services which the "Haves" would supply to the "Have-nots" in a library network. Participants should be willing to pay a proportionate share of the expenses of network operation. Formal organization among network participants is very important. Some states today are trying to organize their library systems on the basis of later, informal cooperative arrangements. On the other hand, some are trying to organize their libraries more formally by being specific about the number of network participants in the state, about the kinds of libraries to be affiiliated, and about a clear definition of the rules and regulations of network participation.

To me, building networks means building from the bottom, up. In order to succeed, the people involved have to be properly motivated so that they can attack the change with conviction. We have to begin at the grass roots. I don't believe, for example, that the Federal Government will be able to dictate the grand design for library or information network development in this country. For the design to work, it has to originate at the local level where service begins, and where service needs are expressed and understood. Formal organization implies specific areas or regions within a state, in which a dominant library serves as a node for other state resources, and for available national resources.

The second characteristic of networks is *communications*. The right kind of lines have to bridge the different access points. Such bridging does not mean that every area in California requires the same elaborate, broad-band communications highways, however. But I do see the major resources of the state, for instance, the university libraries, being connected to Washington, to the Chemical Abstracts Service, to Physics Abstracts, and the other national resources. Interaction with large quantities of digital information and retrieval of facsimile information and video materials can be exected to be part of the traffic pattern for the major resource nodes. However, the development of different levels of communication for the other echelons of the network will undoubtedly depend upon local needs. The right kind of communication system, connecting each of the nodes in a formally organized network, will make it possible for a businessman to have access to the entire range of resources available to him in his community, in his home state, and eventually, throughout his country. Thus, two things are necessary for network building: the first is formal organization, and not merely cooperation, but something much more meaningful and probably contractual; and second, the installation of appropriate communication facilities, but not necessarily the same communications capacity at every level of library service.

The third ideal network characteristic is what I call *bi-directional capability*. If we are going to have multi-media communication highways, they will have to be two-way streets. Our television systems of today broadcast to a mass audience, but there is no way for the viewer to ask for information in return. We can have two-way communication by voice and by facsimile. Somewhere, in any information system, there has to be a two-way exchange. Such a capability really is no different than a patron's asking a reference question of the reference librarian. The capability of providing this two-way conversational ability should be present in any communication system designed for information exchange.

Finally, the fourth ideal characteristic of an information network is a *directory and a switching capability*. In my lifetime, I don't expect to see anyone walk up to a computer, press a button, and get information. I'm as enthusiastic about library automation and information retrieval as anyone, but I think the simple push-button concept is a pipe-dream and a myth. If we are going to have communications that will connect different sources of information and make them available at the grass roots level, then the least service we must provide in such a network is a directory of the resources, rather than the resources themselves. For example, a businessman in the State of California should be informed by the network that Alfred University in New York State has the best glass and ceramics information collection in the country.

So I first see the development of a directory of holdings and then, certainly, a switching capability. As we heard this morning, we already have that capability in our telephone system. When we make a telephone call from Sacramento to Washington, we can go by way of Salt Lake City in one instant, and by way of Houston, Texas in the next instant. We don't know which way the call is routed, but there is an AT&T computer at a nearby switching station which selects the optimum path for the call and distributes it over the most direct open path at that particular instant. Thus, when we consider interstate and then national information networks, we must provide for the same kind of switching facility. A very interesting feature of communications is that the path of request does not necessarily have to be the path of delivery. In the traditional library world, the path has always been the same.

These, then, are my four main characteristics of networks. I see the twin problems of communications capability and standard practices as the two critical ones. We speak of hardware and software, but it's the "liveware" that's most important in building an information network. It's going to take people to do what I've described. It's going to take a realignment of organizations along with a restatement of functions. There is a tendency today to overstate aspirations and to understate the technical and human complexity required to achieve these objectives. I hope that I have conveyed to you some of the basic concerns and considerations in the network area.

Facing page, Mr. John A. Humphry addresses the Conference.

NEW YORK LOOKS AHEAD: A CHALLENGE TO CALIFORNIA?

John A. Humphry
Assistant Commissioner for Libraries
New York State Education Department

It is an honor to be invited to California to talk about New York State's library program. I think I can be objective in my remarks, because I have not been Assistant Commissioner for Libraries in the New York State Education Department long enough to be responsible for many of the progressive programs that have been taking place. But I am convinced that the states now have an opportunity to do what never was previously possible—to direct these comprehensive library programs. This is an exciting and a challenging period in our library history, and it is a singular opportunity that we now have to work together effectively and efficiently for the benefit of the people we serve.

I note that the term "partnership" appears as a thread that runs through your program. It is a particularly appropriate term to use, because partnerships involve two or more people or organizations working together to achieve a defined goal which is mutually advantageous. It is certainly the appropriate term to apply to the present cooperative programs of library service being planned and implemented throughout the country.

I. SYSTEMS OF LIBRARIES

The system concept of library service has grown rapidly during the past twenty to thirty years. Before the establishment of library systems, few libraries except those with endowment funds or substantial public support could afford to provide quality service, comprehensive collections of materials and expert assistance to the user. With the establishment of library systems, however, most of which are supported by funds from the states and, in recent years, from the federal government, library service has been noticeably improved.

The twenty-two public library systems in New York State include every county and serve all but one percent of the population. The public library system structure, therefore, is all but complete. 706 of the 726 public libraries hold membership in these systems. Some of the systems, those in our large cities, are of the consolidated type, while others are federated or cooperative. The cooperative type is by far the most prevalent. Each system is governed by a board of trustees and administered by a system director with a staff that provides regional services. State funds have provided a major source of income in support of library systems.

During the twenty-year period of library system development in New York State which began under Governor Thomas E. Dewey and has developed through the years to the present administration of Governor Nelson Rockefeller, the program has thrived and developed to its period of greatest usefulness. In the present fiscal year, the State of New York is providing $15.5 million in support of public library systems. The program has some legislated features; as population and local support increases, state support increases without legislative revision.

Since the early 1960's interest has been expressed in developing library systems that can provide resources and services in greater depth. Following studies, proposals and a Governor's Conference on Libraries in 1965, an initial appropriation in fiscal 1966 of $700,000 was provided to start a new program, the Reference and Research Library Resources Program. There are nine chartered and registered reference and research library systems operating today. Most of these systems have directors. This program is designed to improve access to advanced materials for the serious library user, members of college faculties, college students, professional personnel, and those in business, industry and government. The 3R's program, as we call it, provides services on both state and regional levels. The largest and the first 3R's system to be established was that set up in New York City, and is known as the New York Metropolitan Reference and Research Library Agency, Inc. (METRO). The director of the New York Public Library served as President of this 3R's system from its founding until he was recently replaced, on a rotation basis, by the Vice President for Research of the Sterling Drug Company.

This kind of program involves the working together of all the groups I have mentioned, in order to marshal the resources of a given region. Three of the nation's largest public library systems, some of the largest college and university libraries, and special libraries, are all expected to work together to improve library service.

A word about the METRO program. It has an executive director, John Mackenzie Cory, on a part-time basis, assisted by two deputy directors. The membership includes some 70 different libraries at present—four public library systems, a number of large college, university and research libraries, and special and academic libraries. The urgency of reference and research needs in the New York metropolitan area has led to METRO's sponsoring several ambitious projects. These include the assembling of a specialized roster of consultants, who work with these libraries upon request in such areas as accounting, abstracting, data processing, translation, personnel, and so forth. Plans call for the centralized storage of lesser-used materials, an interlibrary communications network, an interlibrary training and discussion program, and an interlibrary transportation and messenger service.

Russell Shank, formerly of the Columbia University School of Library Service, and now Director of Libraries for the Smithsonian Institution, recently directed a study for METRO. This was financed by the New York State Science and Technology Foundation to study and identify the needs of those who use scientific and technical collections in the metropolitan area, to evaluate the resources in the area, and to design a program that would more nearly meet the needs of users. This is typical of the work of the 3R's programs to date.

Last year an appropriation of $850,000 was made by the Legislature to the Department of Education for this 3R's program, and this year the appropriation is $1,215,000—this in a year in which budgetary restrictions are tight. Even in tight budget years, an articulate group with a conviction for cooperative effort can make headway.

We have no doubt that this program will sell itself as time goes on, and as these services become more widely used and better appreciated, the money from the Legislature will be forthcoming. We do not know to what extent we can expect the program to be financed, but we know that even in 1961 the cost was estimated to be eight million dollars. Each of the nine 3R's system has a grant of about $50,000 in 1968–69. In addition, special project grants have been made to three systems providing an additional $17,000 to $50,000 for their systems. Grants were made on the basis of a review of project applications submitted to the State Library.

"New York State and Private Higher Education," a report of the Select Committee on the Future of Private and Independent Higher Education in New York State, commonly called "The Bundy

Report," specifically recommended that the State Library's reference and reasearch program be supported and continued. We were delighted to see this recognition of our program.

In 1967, the Division of Research and Evaluation of the New York State Education Department completed a three-year study of the public library systems and issued a report entitled *Emerging Library Systems*. The Commissioner of Education appointed a Committee on Library Development and charged it as follows: 1) to study the report and the recommendations in it, 2) to assess progress made under the 3R's program, and 3) to make recommendations for continued library development in New York State. The Committee on Library Development meets every month for two days in New York City. It includes trustees, librarians, a library educator, laymen, and a selected group of staff. The Committee is preparing recommendations on next steps for the library program in New York State.

With this background on the development of the library partnership plan in New York State, let us move on to a discussion of some of the principal ingredients of the system concept of library service: 1) organization and components, 2) financial support, and 3) services and resources.

Organization and Components

One of the most important elements, if not *the* most important element, in a system of libraries is a strong resource center. It is essential that a library system have resources in the form of printed materials, as well as non-book materials such as educational and documentary films; recordings of music, language, drama and speech; maps; pamphlets; periodicals and other communications media representing the interests of all the people it serves. The theory underlying the establishment or designation of a resource center to serve a library system is that every person who lives within the service area is entitled to access to a comprehensive collection of both general and specialized materials covering topics of importance and of current interest.

Unless there are strong central libraries or resource centers to support the system concept, the plan of service cannot work successfully. We have found in New York State that there is nothing to be gained by grouping several small ineffective units into a large ineffective unit. Experience has taught us conclusively that there is no substitute for a strong resource library. In addition, there is no substitute for building library systems on strength. In New York State, we have included, where possible, strong units of library service to support library systems. Where we do not have strong units of library service within a system, the state helps a central library to build a strong resource collection for support of the system. This we call central library book aid, and an additional half-million dollars is provided annually to make this program possible.

In addition to book aid for the smaller central libraries, all systems receive a grant of money to further strengthen central library services.

We have been working for ten to fifteen years to provide some of the sparsely settled areas of New York State with libraries which meet our standards of excellence. Although half of the people in New York State live in New York City, there are still many rural areas within the state, and we need to build up adequate supportive collections for the people in these areas. We have been working on the basis that 100,000 adult non-fiction titles should be available in any library system, and we note that in the Martin and Bowler report for California a goal of up to 125,000 book titles is set for subject center libraries. I presume non-book materials are to be in addition to this number.

The Interdependence of Libraries

While public libraries have led the way in the development of systems or networks of libraries, increasing interest on the part of responsible librarians is being expressed for the development of systems of libraries whereby all types are drawn into a coordinated, planned program of cooperation. As library programs have developed and as demand and interest in books and information services of greater depth have been generated, college, university, research and special libraries have been invited to participate in cooperative efforts involving all types of libraries. The general collections of academic libraries usually complement and supplement public and other library collections within a regional library system, while specialized collections support demands for such materials on a statewide basis by contract directly with a state library.

Colleges and universities recognize the advantages of cooperative systems of service. The establishment of the Ohio College Library Center to perform bibliographic services and to share specialized resources is recognition of the fact that colleges and universities face the same problems as public libraries in providing all the services and resources an academic community needs.

It is recognized that school libraries, like college and university libraries, are part of a larger administrative structure and do not function as independent units of service. They exist to serve the educational unit of which they are a part. Nevertheless, there is a specific trend within school library programs to develop media centers or comprehensive collections of books and nonprint materials in support of curricula within the school building, as well as within school systems or groups of school systems. Plans can be devised which should include school libraries and media centers in cooperative relationships with other library networks. This does not preclude, however, the need for local school and public librarians to meet, to talk, to work together, for the public librarian to understand something about the school curriculum, for the school librarian to know something of the limitations of public library collections. There are many ways in which the two can and should work together, in view of the fact that both are usually supported by the same jurisdiction.

It is hoped that through Title III of the Library Services and Construction Act, when meaningful appropriations are forthcoming, ways can be found to involve school, academic and special libraries in library systems, probably through memberships. It is not intended that the identity of the various types of libraries will be lost, nor the special functions of each type of library usurped by any other library, but that resources and services of a specialized nature can be the privilege and right which go with membership. In addition to the hoped-for federal support of library cooperation, the Commissioner's Committee on Library Development has recommended to the Commissioner of Education and the Board of Regents, which body has filed with the Legislature a bill requesting $2,500,000 to establish an Interlibrary Cooperative Development Project Fund. The bill would, if certain regulations established by the Commissioner of Education are met, make funds available for exemplary projects which involve two or more types of libraries—public, school, college, university and special. Eligible applicants could be a public library system, a reference and research library system, a Board of Cooperative Educational Services, a school district or a group of school districts. This experimental approach should guide us into new patterns of library service.

The future of library service should involve a number of networks coordinated through a central agency, in most instances a state library, eventually leading to area service comprising a group of states, and finally to national and international communications systems. We should keep ever in mind that we have broken down some of the barriers of political subdivisions within states, but that the borderlines between states are just as arbitrary and artificial as those within the states. At the present time, in New York State, the systems of public libraries and the systems of reference and research libraries are established entities. We should now be coordinating our efforts with those of the State Technical Services Act, which is financed by the federal government and administered by the United States Department of Commerce. An example of such cooperation has been established by the Regional Information and Communications Exchange set up at the Fondren Library of Rice University in Houston, Texas. This program links, by means of rapid communication, eighteen Texas gulf coast college and university libraries that provide business and industry with information from the resources of the entire region. It may well be that these library systems and information systems can be meshed and coordinated for the benefit of all.

State Library Responsibilities

There is evolving a division of responsibility for services and functions between the state library and library systems. Library systems may well assume responsibility for providing advisory assistance in such areas as work with children, youth and adults, reference service, audio-visual programs, etc., and leave to the development division of the state library a more specialized and comprehensive responsibility, such as assistance in the management analysis and computer areas, the coordination of programs within systems or the coordination of a group of library systems, cognizance and review of library legislation, administration of state aid funds as well as appropriate federal funds, and broad programs of in-service training for trustees, librarians and other library staff members. It is expected that there will be systems organized by subject specialty, such as law and medicine, but these must be tied into the comprehensive interlibrary loan networks. We are already working actively with the New York Academy of Medicine in New York City, which is the second largest medical library in the world, and which has been named by the National Library of Medicine as its regional library for the area. The New York State Library, we hope, will be a part of this special subject system.

It is essential, however, that cooperation and coordination be maintained instead of splintering what should be a unified approach. This task falls without question to the state library, which must be strong and well supported to do this multiplicity of jobs. The planning, direction, guidance and coordination emanating from the state library is all-important. Both leadership and high-level resources are essential in a state library, a vital component within the state-wide library plan. The true function of a state library is now coming into sharper focus.

Financial Support

No one needs to be told that it is impossible to provide services and make resources available without adequate financial support. While there are a variety of sources of support, there is no question but that financial aid from the state is a prime requisite. It is the one level of government which can provide the most meaningful direction to these broad cooperative programs of library service, and it is therefore essential that states participate in the financial support of libraries and library systems.

I think I should emphasize here that New York State's financial assistance to the public libraries goes through the systems. We do not provide funds for public libraries—we provide funds to public library systems. The systems ought to know what is needed most at local levels. I think this is a very significant development in New York State, the result of a wise decision.

State aid to libraries is recognized by the majority of states as a legitimate public expense. Our New York State experience continues to point out this fact, since both rural and urban areas find it increasingly difficult to provide the funds needed to reach and sustain quality library service.

Your California report on public library service mentioned above includes realistic requirements from the state for public library support. If state funds for public library support and for the support of the State Library reach one dollar per capita as recommended, approximately $25,000,000 will be available. Thus, there is something of a gap between the present appropriation and the hoped-for projection. You should not let this discourage you. The New York State program has been in operation for 20 years. Refinements have been made, the latest being the 1966 revision in the legislation. The program now provides 15.5 million dollars for the public library systems. This does not include the $1,215,000 appropriation for the 3R's program (we hope it will reach eight to ten million in the foreseeable future), a half-million dollars for book grants to central libraries of systems, and more than two million dollars for the operation of the State Library. We have about 19.2 million, and we feel the need for additional support!

The Commissioner's Committee on Library Development has recommended further budgetary and legislative measures which have the approval and support of the Board of Regents. If these projects are funded, New York State will be spending approximately 27 million dollars a year in support of library services, none too much for the programs which have been outlined.

I noted that Dr. Martin's recommended funding for the state of California's share comes to approximately 22 percent. This fact brings me to the question of a fair-share formula. The profession must work out a fair-share formula, i.e., the sums which are reasonable to expect from each of the several levels of government in support of library service. We expect that the report of the President's National Advisory Commission on Libraries will have recommendations with respect to the support of libraries and some reference to the fair-share formula. New York State is exploring the support from counties, and major breakthroughs are taking place. The major city libraries are providing so much service beyond their own jurisdictions that the city fathers are taking a very long look at the problem, even though so much state aid goes into the public library systems. We provide New York City with more than five million dollars a year, but this is small compared to its requirements, we are told. New York City's fiscal problems are staggering, and the state is expected to make up deficits in every area of service, including library service. There is no need to look to the counties for help, because New York City and its five boroughs *are* the counties.

In addition to the fact that libraries will be supported from a number of sources, there are many interesting contractual arrangements being made today between libraries. It is foolish for one library not to provide service on a contract basis to an adjoining town, if the job can thus be done more efficiently and less expensively. There is a beginning being made in New York State on contract services.

Equalization is a factor which should plan a part in any kind of computation for state aid. More and more attention is being paid by experts in public finance to the local jurisdiction's ability to pay and the need to include an equalization factor in computation or in formulas. Where need exists and the intent of a local jurisdiction is directed toward improvement but is limited by its ability to pay, some kind of recognition and assistance should be forthcoming. Our public library systems law does not include an equalization clause, but I understand that the 1966 revisions and amendments to the California Public Library Services Act does include an equalization factor.

Most of the major cities in New York State support large and qualitative library programs and serve as resource centers for some of the library systems. New York City is facing increasingly serious financial problems, and the cost of providing services is mounting rapidly, while income increases at less than half the rate that costs increase. The City of New York's budget is about one-half billion dollars in excess of that of New York State. It is interesting that federal funds were first made available to rural areas where people did not have as ready access to quality library service as they did in the more heavily populated sections and where financing problems loomed large; now urban, suburban and metropolitan financial problems are at least as serious and difficult to resolve.

One of the findings of *Emerging Library Systems* is the serious shortage of adequate buildings. The state aid program has been providing funds for books, services and personnel, but no provision has been made for more space in which to house them. A bill is now in the Legislature which would provide state aid of more than two million dollars annually to help supplement the Library Services and Construction Act Title II funds. It will take us years to meet the demand for additional space, since our report says that we are two to three million square feet short, and we can only keep up with the need for new buildings, not go back to meet previous requirements.

Services and Resources

With the growth in population, we can expect continued growth in the use of libraries. In addition to the mere increase in numbers of people, educational achivement is greater and therefore demands upon libraries also increase. Our evaluation of systems predicts that public library use will double within twenty years. We must prepare now for this anticipated increase.

Interlibrary Loan

Dr. Lowell Martin in his many library studies has called interlibrary loan one of the most tangible of cooperative projects, one that reaches many people and which gains wide appreciation. Our own experience in New York State would bear out this observation. A key element in our reference and research library program includes a pilot interlibrary loan program involving the following libraries as area or subject referral centers: Brooklyn Public Library, Buffalo and Erie County Public Library, Columbia University Library, Cornell University Library, Engineering Societies Library, Metropolitan Museum of Art Library, Monroe County Library System, New York Academy of Medicine Library, The Research Libraries of the New York Public Library, New York University Library, the Library of Teachers College and Union Theological Seminary Library. Up until two years ago, the chain of search in our interlibrary loan program stopped at the State Library. Now these libraries are under contract with us to provide materials of a general or subject nature which cannot be supplied by the State Library.

Our experience tells us how important it is that advance public relations and information programs take place, that union lists and other bibliographic sources be developed, and that speed be achieved in getting information or material to those who request either.

New York State has had something of an advantage in planning an interlibrary loan network, since the public library systems have increased the use of interloan by 200 percent between 1957 and 1964. As we draw to the end of the year of experimentation with the more sophisticated program, we are studying the results of a monitoring of the program by Nelson Associates and have held five field meetings with representatives of participating libraries across the state. The program will be continued with a slightly new design. This is an extremely interesting experiment and when a twelvemonth period has elapsed, more than 100,000 loans will have been made. Payments are made to participating libraries based on activity and willingness to serve.

Related to the interlibrary loan program is the matter of getting materials or information to people requesting same. The New York State Library is now considering using an express delivery service which would run the length of the Thruway, that is from New York City north to Albany and thence west to Buffalo, with drop-off points coordinated with the nine regional reference and research systems. In addition to this delivery service, the State Library provides teletype from all public library systems to the State Library, and all our contracting resource libraries are provided with teletype at state expense. This state-wide delivery or courier service would also be supplemented by the public library systems, almost all of which provide delivery service on a regular schedule to member libraries.

You may know that the New York State Library's experiment in telefacsimile which linked the Library with 14 resource centers throughout the state was terminated at the end of March, 1968. Technology needs improvement, resolution of copy was frequently poor, there was not sufficient demand for the service, perhaps because of lack of advance public relations and information; all of which resulted in a high unit cost. We are abandoning the concept only temporarily, however, and when technology improves and demand warrants, we are ready to try again. Meanwhile, we shall devote our attention to an improved interlibrary loan service, and since we have merely begun to reach the potential capacity, we can profit and learn how to design a better facsimile transmission service. The whole matter of copyright may be clearer by the time we give further consideration to the project.

Bibliographic Aids and Library Automation

Closely related to communications and the need to relay information rapidly is that aspect of our state level planning which involves bibliographic control. We are about to contract with a library unit within the State University system to create a state-wide union list of serials which will include the holdings of the major research libraries of New York State. We intend to conduct the work in phases, and gradually build up the usefulness of the list by adding holdings information of strong libraries. About 30,000 serial titles of the New York Public Library will be added, for instance. Such bibliographic tools will gradually increase the effectiveness, and especially the speed, of our state-wide interlibrary loan program.

Early in 1968, the State Library began pilot operations of a computer-assisted serial control system. It is expected that more effective control over acquisition and receipt of serials will be the result.

Another example of the potential within the field of automation is the organization by the state's 22 public library systems of a computer-based centralized cataloging center, known as the Association of New York Libraries for Technical Services. It is a chartered corporation, has a board of trustees and a newly appointed director. The board meets monthly and is representative of all 22 library systems, including New York City. The group is about to approve a recommendation of one of its committees with respect to uniform cataloging policy, a major accomplishment when one considers the group is representing the more than 700 public libraries in the state.

II. NEXT STEPS IN LIBRARY DEVELOPMENT

I cannot leave the broad subject of services and materials without mentioning the work of the Commissioner's Committee on Library Development in attempting to define the role of each of the various types of libraries as they relate to both the user and the non-user. LSCA funds are being made available to several of the major city libraries for experimental library programs for deprived people—a series of specially devised programs to help these people help themselves through an association with books, reading and libraries. These programs have been and are being evaluated by sociologists and personnel in disciplines other than library service.

All of our programs suffer from lack of personnel qualified to perform the many and varied tasks that need attention by a variety of competencies. At the present time, the State Library's Division of Library Development is providing funds for four regional recruiting projects on a multi-system approach. Cadet programs, work-study concepts, visits to placement and guidance personnel, etc., are being planned to interest capable young people in the profession. But it is not just more of the same that we need. New solutions to manpower problems must be sought.

Despite the fact that personnel problems continue to plague us, especially the critical shortage of professionals, research is needed to 1) determine positions in libraries that do not require a year or more of college training in librarianship, 2) explore the possibility of training library technicians in junior and community colleges, 3) relate or articulate properly undergraduate and graduate library education, 4) develop institutes and workships for the continuing education of practicing librarians, 5) determine the course content for graduate library training, and 6) evaluate certification programs with a view to seeking a national plan to insure the complete mobility of professional librarians.

Here is where we must maintain close liaison with library education, cooperate on research and library studies and generally exchange information of mutual concern. And here we have another whole subject for discussion.

Let me conclude by commenting briefly on a few of the ingredients of cooperative effort as well as mentioning a few pitfalls:

1. Cooperation is a state of mind, a genuine desire on the part of all participants to work together.
2. It begins in a small but specific way—don't try too much at once!
3. Cooperation among libraries within systems and networks begins at a meaningful level, and by this I mean that cooperation is not a device whereby weak libraries circumvent their principal and unique functions.

4. Finally, we have to have a genuine desire to work together. And this calls for the greatest of stature and statesmanship, if our programs are to be successful.

Mr. Raymond M. Holt

ADDRESS, "HOW MANY DROPS TO FILL THE BUCKET?"

Raymond M. Holt
Librarian, Pomona Public Library

It is my task to transfer us from the comparative Utopia of New York, as presented so eloquently by Mr. Humphry, to the realities of library service in the Golden State of California. It is the purpose of this presentation to review and summarize progress being made by public libraries through cooperation in our state.

We have been hearing a great deal in these meetings about what library service can be. Yet we must somehow get from here—where we find ourselves today—to there, the tomorrow of our visions and dreams. To a degree, we find ourselves in somewhat the same position as Ole and his friend, Yorgi, who worked in a large paper mill in the Northwest. While loading the last rolls of paper on the back of a truck, Ole suddently felt the truck begin to move away from the loading dock. As he hung desperately by his finger tips from the top rolls of paper, his friend Yorgi, standing behind on the dock yelled his advice, "Yump, Ole, yump!" But poor Ole, his feet now dangling in midair, cried back, "How in 'El can I yump when I ain't got no place to stood?"

By providing a historic resume of where we have been and where we are, I hope we can at least have a solid platform from which we can take that tremendous jump into the future that our prophets here foretell.

Without doubt, this past decade has seen cooperation among public libraries increase from a few drops to first a trickle, and now to a small stream. Before we try to measure the library resources which have accumulated in our bucket it would seem advisable, however, to review the basic events which have encouraged this change.

As a matter of fact, my remarks might well have had a subtitle consisting of these three questions:

1. Where have we been?
2. Where are we now?
3. How do we get to where we want to go?

Looking back, it seems clear now that the initial thrust resulted from a strenuous workshop which took place at the State Library here in Sacramento in 1953—just 15 years ago this spring. Concerned with existing inequalities in library collections and services available to the public, a group of librarians developed a set of objectives and minimal standards to bring about the orderly development of library resources. I recall that we departed from this experience feeling that a great deal had been accomplished. In our innocence we believed that since measuring sticks were now available, local jurisdictions would carefully measure their own libraries. If shortcomings were found they would automatically heed the advice of the standards to improve their lot by entering into agreements and thereby form cooperative systems of libraries. However, by 1957 it was obvious that volunteer cooperative action was not opening the tap to better library service. Hence, the aforementioned meeting on problems in metropolitan service in Bakersfield to explore the problem further. Meanwhile, back at El Rancho Sacramento, a bill had been introduced to establish a Public Library Commission whose task it would be to make a survey of the public library resources in the state, measure them against the standards of 1953, and provide recommendations for further development of libraries in California. This bill became law on September 11, 1957. A year later the report was released establishing in statistical terms the tremendous inequities of public library resources and services in the fair State of California. In submitting its report to the legislature, the California Public Library Commission recommended that public libraries expand and extend their resources through cooperation, contract, and the forming of library systems, while maintaining their political autonomy. This reenforced the concept originally expressed in the 1953 Standards. The Commission further recommended—*and this, of course, was the vital provision needed to motivate library action*—that the state government had a responsibility for a share in the support of public libraries as a part of the overall educational system. Therefore, it was recommended that the state institute financial grants to encourage cooperative action and to stimulate increased local support.

As a next necessary and logical step, a Master Plan for public libraries in California was prepared and adopted by the California Library Association in 1962 to provide long-range guidance to those concerned in developing improved library service. Meanwhile, using Federal demonstration funds, a group of libraries in the North Bay area formed the North Bay Cooperative. Covering a large geographical area, this system was composed of primarily small and relatively weak libraries. Here, in this laboratory, the libraries of the state came face to face with the realities of system operation for the first time. The success of the North Bay Cooperative, and the enthusiasm it generated in its members and among the population served, was perhaps the most significant single factor in giving encouragement to other groups of libraries looking toward formation of cooperative systems. The on-going record of achievement posted by the North Bay Cooperative continues to make it a pioneer and an example for the rest of the state.

With the Commission report and the Master Plan in hand, interested legislators proposed enabling legislation which resulted in the California Public Library Services Act of 1963. This Act provided funds for three purposes: (1) the planning of library systems by groups of libraries interested in the possibility of working together, (2) the actual establishment of library systems with grants to cover some of the initial costs, and (3) continuing support through a per capita formula. The modest sum of $850,000 was appropriated for the first year of operation—fiscal 1963–64. In rationing out these dollars, the State Librarian, working with the Public Library Development Board, established by the Public Library Services Act, gave preference to use of the funds for planning. Libraries were encouraged to join hands by negotiating agreements which would indicate their interest in future cooperation and system development, but in no way committing them beyond the planning period. For each library entering into such a contract the state provided the planning group with $2,000. Stimulated by this allocation, applications for planning grants amounting to $165,961, and involving 44% of California's public libraries, were received and approved during the first year. Cooperating libraries used their planning grants to retain qualified firms and indivuals to study their local requirements and to make specific recommendations for improving the quality and quantity of library resources and services available to the public. The reports which followed documented beyond all doubt the general inadequacy of public libraries and the almost unbelievable imbalances in service and collections existing between libraries in neighboring communities. These reports, which in effect are really monumental case studies, have been summarized and reviewed in the Spring, 1966 and Summer, 1967 issues of *News Notes of California Libraries*, published by the California State Library. Together they form an important reservoir of fact, observation, and recommendation regarding the past, present and future of library service in this state.

Whether dealing with the highly concentrated populations of metropolitan centers, or the sparsely populated hinterlands of Northern California, the researchers agreed that the first step toward improvement in public libraries could best be made through the formation of cooperative library systems. This recommendation, arrived at independently in the instance of each study, provided an immediate stimulus. Library officials and librarians were suddenly confronted with such a massive amount of evidence of public need on the one hand and library inadequacy on the other, that such a solution could not be ignored.

Acting on these recommendations and following the guidelines of the various studies, the formation of systems began. In the very first year—1963–64—five cooperative systems were formed containing a total of 31 libraries.

In summing up that fateful first year's activity, the Public Library Development Board reported: "It seems doubtful that any previous expenditure by the state in any field of planning has produced so much activity as have the planning grants for public libraries."

The following fiscal year saw a gradual shifting from planning to action. Before the second year was over the number of systems had grown to 12, and the population served by library systems jumped from 6,154,000 to 10,106,000. After four full years of activity, the Public Library Development Board reported in December 1967 that there were then 19 systems in the state serving nearly 14,000,000 people.

Meanwhile, the State Library had authorized Dr. Lowell Martin to make a state-wide survey of public libraries to determine in part just how big our bucket of library resources needed to be. This culminated in the report entitled *Public Library Service Equal to the Challenge of California,* published in mid-1965. Dr. Martin's study not only reconfirmed the previously established inadequacy of library resources of the state, but went a step further to make specific recommendations toward the structuring of library service through strengthened system development. The impact of this report was greater, perhaps, than any that had preceded it and is still a potent influence in our planning processes.

In summing up his report, Dr. Martin stated: "A core group of California public libraries shows up well by any measures . . . but distinct shortcomings show up in all measures of modern library resources . . . one-half of California adults lack access to the range of popular and informative contemporary literature they want to consult regularly, and three-quarters lack access to the more special subject and general resources which they need from time to time. Sixty percent of California's children are short-changed, being without adequate reading material and/or skilled children's librarians. It is on this basis that the conclusion is reached that Californians are lacking public library resources of sound quantity and quality."

Speaking of the financial conditions of our libraries, Dr. Martin found that less than 11% had financial support at or above the then recommended level of $5.00 per capita. He commented on this, saying: "Approximately $5.00 per capita, or $90,000,000, is needed in California in 1965–66 to provide the sound minimum public library program outlined in this report. In 5 years, $110,000,000 to $115,000,000 will be needed for a population of over 20,000,000 people." By comparing Dr. Martin's $90,000,000 figure with the $61,974,210 actually spent on public library service in that year, one can arrive at a general estimate of how far we are behind this goal and the level of service it would provide the people in our communities.

To remedy this situation, Dr. Martin recommended a program consisting of 3 essentials: "(1) a coordinating plan for public library development on a state-wide bases . . . (2) clarification of the responsibility and the role of the state level of government in providing adequate library facilities for residents of the state, and (3) substantial increase in the amount of money put into the library program." As part of the plan, Dr. Martin recommended structuring library service in a series of 5 related levels beginning with Level I—the local community library. This level of service should be backed up by Readers' Subject Centers, Library Systems, Reference and Research Centers, and the State Library.

Among other reactions it was immediately clear that Dr. Martin's report, as well as the developments which had followed on the heels of the Public Library Services Act of 1963, had made the original Master Plan obsolete. Therefore, the California Library Association assigned to its Library Development and Standards Committee the task of preparing a new plan. The new document, *A Master Plan for the Development of Public Library Service in the State of California*, appeared in 1967. This same committee is currently preparing standards and guidelines by which progress toward the goals of this Master Plan can be measured. The new Master Plan accepts, with some modifications, the basic concepts of the Martin study. The Master Plan is based upon these principles:

(1) Every citizen of California has an equal right of access to all of the knowledge resources in the state;

(2) The potential library needs of the individual are equally great, urgent, and complex whether the citizen lives in a remote hamlet or in the heart of a metropolitan area; therefore, the place of residence cannot be a factor which limits or determines how much and what kind of library service the individual is to receive;

(3) In spite of the mobility of today's public, the individual cannot be expected or required to move from place to place in his quest for material; rather it is the responsibility of the library to provide unlimited access through whatever point of contact the borrower finds convenient.

The Master Plan gives recognition to the ultimate necessity to provide access to all types of libraries. We are convinced that the unbounded needs of an overwhelming population cannot be satisfied short of tapping every resource in the state, and indeed, by extension, the nation. In effect, a network of library systems composed of all types of libraries must be organized if the goals of the Master Plan are to be achieved.

All of this talk about partnerships reminds me, somehow, of the parrot story I heard recently. It seems that an elderly lady in the Midwest received a very large parcel from her grandson who had been visiting in San Francisco. When she opened it, she found a large cage with a beautiful parrot inside. A few days later, her minister stopped by and admired the bird.

"Does he talk?" said he.

"Well, a little," she replied. "But so far all that bird has said is 'Let's make love, let's make love.' "

"Oh!" said the parson. "I think we can fix that. I have a parrot who can only say, 'Let us pray, let us pray.' Perhaps we can teach your bird his line instead."

Thereupon, he fetched his parrot and the two birds met, the first squawking, "Let's make love, let's make love!"

To which the minister's parrot replied, "My prayers have been answered! My prayers have been answered!"

Before looking into the bucket to see what may have accumulated in the way of library resources, reference should be made to the fact that the Public Library Services Act itself was amended in 1965. In two brief years considerable progress had been made. It was possible, therefore, to eliminate the provision for planning grants and to insert an equalization formula for the distribution of per capita grants. These all-important per capita grants constitute the continuing resource of financial support available to library systems. However, inasmuch as establishment grants for libraries joining library systems take precedence over the use of funds for these per capita grants, the amount of per capita grant money distributed to the 68 cooperating libraries in 1966–67, for instance, amounted to only $658,414. Since these libraries served some 13,000,000 people, this amounts to less than a nickel per person—rather a slim diet, even for incentive!

Now, let us try to get some idea of how much improvement in resources and services has accumulated in our bucket as a result of these developments. Although the bucket is far from full it is evident that library resources *are* slowly rising. Of the 20,000,000 or so people living in California, over 13,000,000 are presently served by libraries which are either single jurisdictional systems or are members of cooperative multi-jurisdictional library systems. Now, this fact in itself is more a sign of potential than of actuality. The libraries involved are just beginning to work together, to reconcile differences in procedures, and to implement common objectives and programs. At present there are four single jurisdictional library systems and 13 multi-library systems. Several new cooperative systems are in the process of formation, while many of the existing systems are acquiring additional members each year.

While the funds provided by the State Public Library Services Act have undoubtedly been an incentive, the limited nature of this money can hardly be the sole magnet attracting new libraries and holding old members. Each year the full appropriation authorized for expenditure under the act has been used. Except for one year this has been set at $800,000. For the single fiscal year of 1965–66 the amount was increased to $1,000,000. The total amount authorized for the 5-year period ending June 30, 1968, will have amounted to $4,200,000. This is less than 42 percent of the funds allowable and intended to cover this period under the statutory formula of the Public Library Services Act. It is also less than 1½ percent of the over $307,000,000 raised during the same 5-year period from local tax sources to support library services. Fortunately, temporary and interim help has come from another direction. In 1965 the State Library began the administration of a series of demonstration programs, funded on a matching grant basis under terms of the Federal Library Services and Construction Act. The use of the federal money is restricted to those libraries which participate as members in the library system programs. Nearly $5,000,000 from this source has been put into projects to upgrade collections and services, and a like amount into construction.

Now, we may ask: "How have these relatively small sums of financial aid affected our bucket of library resources?" Surprisingly, by encouraging the formation of library systems, they have, like some potent chemical dye, permeated nearly the entire bucket.

Let us look at some of the tangible results. The benefits arising from system use of state and federal funds in this short period of time are amazingly varied and meaningful to the public. The first of these is the guarantee that each resident of the library system has full and free access to the resources of all system member libraries. In most instances this means that the individual is provided access to collections and services many times the size and scope of those provided by his own jurisdiction. For instance, Pomona's membership in the Metropolitan Cooperative Library System this year means that our citizens can select their reading from more than one and a half million volumes instead of being restricted to the 200,000 books on our shelves.

A second benefit is rapid communications. Most systems, as an initial part of their cooperation, have installed teletype to link themselves to each other and to the State Library so that book requests and reference questions can be relayed quickly. Frequent delivery service between member libraries is a similar common denominator, eliminating the long delays which previously handicapped interlibrary loans. Also, systems have used a portion of their funds for the enrichment of their material resources, adding vital materials to their reference and periodical collections, as well as increasing their general holdings.

System-organized film circuits and film collections have provided a new dimension of service in many library systems. Similarly, purchases of recordings, foreign-language materials, and large-print editions of books have expanded the nature of the media made available to the public. Nearly every system has found it necessary at least to begin some kind of union catalog so that an index to the holdings of all member libraries can be centralized. Through mutual agreement and cooperative action, system libraries have established fields of specialization to increase the scope and depth of their subject materials.

Libraries have equipped themselves with photocopy or other duplicating machines so that they can send copies of needed materials in swift response to reference requests. This resolves the dilemma of whether to send a valuable or frequently used reference book through interlibrary loan, or require a patron to drive many miles to use it in the library.

Funds have also been used to purchase reader-printer equipment for microfilms, thereby encouraging the use of materials available in this format and making it possible to transmit hard copy of microfilmed resources.

All of these developments have resulted in improved reference service and interlibrary loans—a primary system goal.

Other programs which should be mentioned include expanding services to children, cooperative public relations and publicity services, and staff in-service training programs in such things as reference and children's work. Finally, a number of cooperative research projects related to cost studies, record keeping, library usage, and circulation methods, have been undertaken. Mention must also be made of the State Library Processing Center which, in 1966–67, processed 56,441 volumes for 22 member libraries and one library system.

Looking to the immediate future, many new projects are pending. The Serra System, composed of libraries in San Diego County, is planning a demonstration program for all public libraries in San Diego and Imperial Counties not presently members of the library system. It will include a study of reference resources, the relationships of libraries, and a demonstration of improved reference service to the public.

A system information network between the Sacramento City-County Library System and the Mother Lode Library System (soon to be the Mountain Valley System) will augment the ability of member libraries to provide improved service in reference.

The 49–99 Cooperative Library System, headquartered in Stockton and bearing the slogan, "Highways to Better Reading," will soon be completing a project that will supply each of the six community libraries in the system with 2,000 phonograph recordings. In addition, there will be a 10,000-album collection housed at the system's headquarters. Members of the system are developing a 1,000-title large-print collection to serve members of the public who are visually handicapped. In addition, they are providing an extensive collection of foreign-language books in five languages.

While the major thrust of system effort has been to increase, through cooperation, the services and materials available through public libraries, school, academic and special libraries have not been left out entirely. One example of such cooperation is occurring in the Black Gold Library System which includes the libraries in Ventura, Santa Barbara, and San Luis Obispo Counties. At the present time there is extensive cooperation between the system and Moorpark College. Using a Federal Library Services and Construction Act Title III Grant, the college library will be tied into the system by circuit teletype. This will enable the college to utilize the collections in the system's libraries and vice versa. A similar program of cooperation with the special library of the North American Science Center is under study by the same group.

Under a Federal Library Services and Construction Act Title IV Grant, the Black Gold System is also engaged in a cooperative program with an institutional library at Atascadero State Hospital. The eventual goal of the Black Gold System is to link into a close network all libraries in the Tri-County area, regardless of type.

The Sacramento City-County Library System is currently working with the Superintendent of a school district in a low-income area to develop an integrated program of library service, including visits of a children's librarian and a bookmobile to the schools located beyond the reach of existing public library outlets.

In the 49–99 System, exploration is going forward in hopes of developing student-centered library collections to be placed in the small public library branches to aid local students who may live from 10 to 30 miles away from their school libraries.

A planning grant, funded by Title I of the Federal Library Services and Construction Act, has been approved for the Metropolitan Cooperative Library System, centered in Pasadena, to determine how the total library resources of the community, including public, academic, and special libraries, can be brought to bear on the problems of labor and management in business and industry. Already some cooperation exists between the Pasadena Public Library and the libraries of such agencies as the Jet Propulsion Laboratory, the California Institute of Technology, and one of the movie studios.

So, how full is the bucket? I recently circulated a questionnaire to the directors of various library systems asking them to list their most pressing needs. I think a résumé of their responses will provide one measure of how far we have to go.

The most consistent request, repeated in virtually every reply, was for more material—larger book collections—to keep up with the population growth and the increasingly sophisticated demands of the public, more duplicate copies of worthwhile books, expansion of periodical backfiles and current periodical subscription lists, improved document and technical report collections, more educational films—all of these are considered essential to better service. We are only beginning to fill the enormous gaps in our existing collections and the imperative need for providing vastly growing resources in response to public needs.

The 49–99 Cooperative Library System, for instance, estimates that to upgrade the system's basic reference collections to even a semblance of adequacy would cost at least $150,000. The same system feels in dire need of a basic film collection to serve its half-million residents at an estimated cost of $200,000 for the initial outlay.

The Black Gold System notes the need for computerized library catalogs so that the much-to-be-desired union catalog of materials available through the libraries of the state can be achieved by this miracle worker of technology. Many libraries express need for more space for readers and books, more and better equipment for duplication of materials, faster communication between libraries, and the rapid transportation of materials provided through interlibrary loan. There is a persistent cry for more staff, for in-service staff training programs, and for more specialized staff and materials to serve such fields as business and industry. Reference collections appear to need strengthening at all levels of service.

There is a demand for access to the major reference and research collections already existing in our large public, academic and special libraries. As a sidelight on this, both the Black Gold Library System and the Metropolitan Cooperative Library System are presently engaged in negotiating contracts with the Los Angeles Public Library so that the public served by these two systems can have free access through interlibrary loan and reference service to the highly specialized materials and services provided by California's largest public library.

So once again, how full is the bucket? At the moment we have no way to measure the exact amount of progress that has been made since Dr. Martin made his study, and since the first library systems were formed. Each of the programs and achievements I have mentioned may be but tiny drops in the bucket—but they are significant ones when compared to our previous record and status. They are all the more important in that they augur well for the future.

And so we come to the last and most crucial question of all: "How can we fill this bucket of library services and resources?" The answer lies clearly in the area of increased cooperation between all types of libraries through expansion and extension of the library system network. If this is to be accomplished, all who are involved in the provision and operation of library service must actively participate. We, who are librarians, must carefully examine every possible facet of system cooperation and activity, and then proceed to become involved in the development of total systems operation. You who are members of library boards have a very special role to play. Since the provision of adequate and effective library service in your community is your direct responsibility, you must become aggressive proponents of system development. By urging system membership and cooperation, you can encourage your librarian and his staff to move forward in this direction. And you have a special duty to help pave the way for system development by informing and educating city officials who must come to appreciate the importance and values of library systems.

Those of you who are Friends of Libraries also have a very deep responsibility. You must encourage and support library officials and librarians in this venture, both directly and by assisting them in informing the public of the objectives and values of library system participation. More than this, you may frequently hold in your hands the key to the doors to cooperation with academic, school, and special libraries. Your ability to open those doors may often mark the opening of a new era of improved library service to your community.

I challenge you to play the part of a dynamic, aggressive group, paving the way, through inspired leadership, to the realization of partnerships equal to the needs of our public.

And, somehow or other, we must capitalize on the drama of this new era to reach new recruits for our expanding profession. The romance of the computer and multimedia should be added as a new dimension to our still valid appeal of books, people, and service. Unless recruitment and training are given much greater emphasis, we might well find ourselves, in the not-too-distant future, with a highly organized system of library networks with too few people properly equipped, philosophically and intellectually, to operate them.

Library schools must also enter into the mainstream of these expanded partnerships. Librarians must be trained to understand their new role, to utilize the skills demanded by the new media, to make the best possible use of the expanded resources available through the instrument of the library system. And they must be inspired to catch the torch of leadership and carry it forward into the future. We need scholars, we need those who are service-oriented, and we need librarians with a vast potential for dynamic leadership. We need library school faculty as resource people for conducting research and assisting in the academic documentation of standards and objectives of library service.

I believe we are on the right road. The success of our fledgling library systems here and elsewhere attests to this. Certainly, the extension of such systems into full partnerships embracing all types of libraries is a logical development toward better utilizing existing resources.

But there still remains the omnipresent question of adequate financing. While we have come this far on a token contribution of less than 1½ percent of the total spent for library service in California, it is obvious that more money must be made available if the 19 systems now in operation are to continue to expand their activities. Money is needed especially to finance the partnerships we've been talking about at this conference. Dr. Swank has already made it clear that there must be a financial consideration of fair proportions to pay for services and materials provided by academic and research libraries. This is no more than right. As a start, we can seek the full allocation of funds already provided in the entitlement of the Public Library Services Act as amended in 1965. Such funding, for instance, would have provided system libraries this year with $4,200,000 instead of $800,000. By 1970–71 the present formula will provide an estimated $9,000,000—more than 10 times the current support offered by the state.

However, if we are to realize the sophisticated hardware and the services held out in tantalizing array before us, even this amount will not suffice. Another kind of partnership must be established—a partnership of local, state and federal financial resources which, working together with the private sector of our economy, can and must provide adequate funds for this urgent thing Dr. Swank referred to as a new Public Utility.

But money alone is not enough. By your presence at this conference you have acknowledged your own vital interest and concern. It is crucial that you convert this into active support at local, state, and federal levels. Remember, the ultimate challenge is to provide effective and economical library service equal to the diverse and expanding requirements of a rapidly growing population.

We who are directly involved with the operation of libraries are greatly encouraged and heartened by your show of interest and concern. We are pleased but not complacent with what has already been accomplished in California. We are intrigued by the prospects for a vastly improved library service for tomorrow to be created by the partnerships of all types of libraries. We are excited by the examples set for us in New York and elsewhere. While the bucket of library resources and services remains to be filled, the drops of yesterday have already turned into a steady stream. With your help, the faucet can be turned on full force tomorrow.

ADDRESS, "ACADEMIC LIBRARIES: A POVERTY OF ACCESS?"

Dr. Mark H. Curtis
President, Scripps College

I come as an academic administrator but also as a former scholar who has had experience wresting knowledge from collections of books. I have indeed traveled thousands of miles for no other purpose than to work in libraries.

One of the most fascinating—indeed challenging—experiences of participating in a conference of this sort is wrestling with the title which has been assigned you. Obviously, if you distort its meaning too much in an attempt to make it fit your pattern of thought, you may not be speaking on the subject you had agreed to introduce for discussion. On the other hand, if you allow it unconditionally to dictate the form of what you say, you may find that your own ideas and best contributions may appear as unrecognizable foster children —even changelings.

In preparing for this occasion, I have found it unusually challenging—even stimulating—to wrestle with the title, "Academic Libraries: A Poverty of Access?", and to try to make my remarks relate to some of the assumptions underlying that phrasing at the same time as they set forth some suggestions that might guide planning for cooperative use and development of libraries in colleges and universities.

"Poverty of Access"—there was the phrase that challenged my ingenuity. When I first read it, I thought of remarks made at more than one institution by irreverent undergraduates. Frustrated by library rules and regulations, more than one student has called the campus library an academic Ft. Knox where valuable treasure is stored and jealously guarded. Another interpretation of this phrase—and one more likely to be raised by a graduate student or a faculty member than an undergraduate—might lay greater stress on the word "poverty" than on the word "access." Graduate students and faculty members recognize that satisfactory access to needed scholarly resources depends upon adequate budgets for acquisitions. They lament the fact that libraries too frequently suffer neglect in an academic economy of scarcity, not to say poverty. This situation is only aggravated in a state like ours where there is a rapidly burgeoning population of advanced students and scholarly minded faculty. When a book or document is available at Berkeley, or Stanford, or UCLA, or the Honnold, it cannot be made conveniently accessible to all in the surrounding academic institutions who may want to use it.

Finally, the idea of "poverty of access" can also be understood as the attitude of private citizens who have interests and qualifications for research but who find it difficult, if not impossible, to get permission to use the resources of an academic library.

Dr. Mark H. Curtis

The nub of the matter can be put in a slightly ironical way: Even though we live in an economy of affluence, we must, as we deal with library affairs, still search for means to use scarce resources most effectively and efficiently. This problem is particularly urgent to us here on the West Coast where even the older of our academic institutions are still relatively young and must, in stocking their libraries, not only buy current publications but also many, many out-of-print books which their sister institutions in the East acquired in the normal course of events.

Before making suggestions about how we might effectively manage scarce resources, I want first to say a word about a tantalizing but unrealistic solution to our problem. I am approaching, it need hardly be said, the question of electronic systems for storing, retrieving, and transmitting information. At the risk of making myself appear to be a pessimistic traditionalist, I would warn that these systems do not hold out promise of meeting our needs in the foreseeable future. To make this statement is *not* to say that computers do not now have important applications to library processes and procedures. In the area of acquisitions, circulation, and perhaps cataloging, and in union cataloging and the development of union lists of serials, they can now be used by some libraries to advantage, and by systems of libraries to great advantage; and their uses for these purposes may in the near future be improved and expanded, especially as the Library of Congress and other agencies continue to explore ways to develop and refine these applications for all of us. What I am saying is that we are still a long way from the time when material in even a small academic library can be completely stored in the memory of a computer, recalled on a screen for use by a single reader, to say nothing of use by several readers, and reproduced by some process for a permanent copy to be retained by a reader.

Although much of the technology for such a system theoretically exists, its use is still, and will remain for some time to come, so expensive that it is impracticable. For instance, it costs something like $2.50 a page to teleprint a Xerox facsimile over a circuit of a relatively short distance. (I have it on good authority that $2.50 a page is the cost of LDX from Berkeley to Davis.) Furthermore, a closed-circuit television reading station for information retrieved from a computer costs tens of thousands of dollars and will be unlikely to drop any time soon to the point where a college or university can afford an adequate number of stations to serve its students and faculty, to say nothing of members of other institutions or the public at large. We must, therefore, do our planning along more conventional lines. We must be planning how we can make the physical book itself more accessible and useful, not how to use an image of a book transmittable by wire.

One further point must be borne in mind. College and university libraries all have a primary function: They must above all provide instructional and research facilities for their own respective faculties and student bodies. In doing this job, they meet their most important responsibility to a wider public—the society in which they exist; for that society has established colleges and universities, and the libraries within them, to serve the public weal by providing education and research. Therefore, any planning for partnership and cooperation among libraries must be primarily undertaken with the objective of enhancing the capacity of any given library to serve its own students and faculty, and only secondarily to serve others, either within the academic community or outside it.

With these points out of the way, I can now proceed to suggest ways in which academic libraries might work out means of cooperation, both among themselves and with other types of libraries.

Perhaps the basic principle to be applied in such planning is that of sharing the cost and use of essential, expensive, and rarely fully exploited collections and facilities so that a library reserves as much of its resources as possible to provide those publications and services which are regularly and constantly used by its constituency. This would mean sharing important but infrequently used publications and periodicals. It would also mean sharing expensive, scarce and under-employed personnel and services. A little reflection will show that this principle has several practical applications.

First among them, I would mention its application to the shared purchase of certain types of publications. As is almost self-evident, books, periodicals, and other publications can be divided into at least two classifications: those used frequently and regularly and those used infrequently and irregularly. To that scholar or student who needs the latter, those works are just as important and valuable as the former. They must be available on a reasonable basis, but they need not be on campus for immediate or repeated use. Or, to look at the matter from another point of view, an infrequently used work may not be needed on any given campus more than once a year but it may also be needed once a year by a student or faculty member in each of several colleges. Rather than all the colleges buying copies of this publication, would it not make sense to have them share in the purchase of this publication and store it in a place where it would be equally accessible to all members of the several colleges or universities who might need it?

A cooperative scheme of this sort has already proved its worth to the largest academic libraries of the land. The major academic research libraries of the country are members of the Center for Research Libraries with its headquarters and storage facilities in Chicago. This facility can provide to students and faculty members of its constituent members a copy of an important but infrequently used book or periodical in two to three days. One of the distinctive features of its collections is that it has a copy of all the periodicals whose articles are noted in *Chemical Abstracts* and in *Biological Abstracts*.

Following such an example, it would seem feasible for college libraries or even for college and university libraries in the natural regions of the state to form associations which would establish and maintain such centers on a regional basis. The collections of such a center might be started by contributions of rarely used books and periodicals already held by member libraries. They could be maintained by acquisitions financed from annual membership fees paid by the member libraries. The advantages of such a plan are readily apparent: (1) it would economize on the use of library space at the member libraries, for they would only have to provide shelving and service for the works to which students and faculty require ready and frequent access; (2) it would keep acquisition costs for individual libraries at the lowest possible figure while providing to persons associated with the participating institutions access to a collection which few of them could otherwise enjoy; and (3) membership would guarantee equality of treatment and service.

Another form of cooperation among academic libraries might also make more books accessible to all while holding expenses to a minimum. This would require an agreement among libraries in a natural regional grouping to divide responsibilities for acquiring publications in certain specialized areas of research and scholarship. To be practicable, of course, this division of responsibility would have to correspond to special emphases in the academic programs of the participating institutions. Thus a college with an established program in criminology could undertake to acquire the publications needed for advanced studies in that field while another institution with a strong curriculum in oriental languages could devote a significant portion of its resources to developing a good collection to support those studies. By agreement, each would be serving its own special needs but would also be making available to the other many publications which might not otherwise be within its reach.

There are, of course, many more practical limitations to the usefulness of this plan than to the first one. All institutions who would participate in such an agreement would probably have need of basic publications in all the fields covered by the arrangement. How can they be certain that they get what they need without indulging in unnecessary duplication of holdings? An even more difficult problem would be to find an acceptable way of assuring that all the participating institutions lived up to the agreement. Furthermore, academic emphases within an institution sometimes change suddenly and unexpectedly, especially if they are small and if they depend upon the presence of only one or two authorities in a field on a faculty. Finally, a successful agreement of this sort can probably only be concluded between institutions of approximately equal strength which have library budgets of sufficient size to enable them to allocate funds for special purposes.

Much of the planning suggested heretofore would be of limited use, unless we could also find ways to improve the means to exchange information about what resources are available at various libraries. The union catalogue has been the usual answer to this problem. In recent years, however, it has proved to be almost impractical, if not an expensive luxury, expecially if each library contributing to it tries to keep up a current copy of the catalogue. What seems more feasible is a union catalogue maintained by a central clearing house—perhaps an agency like the State Library. All other libraries then could consult this catalogue by telephone, teletype, or other means to locate copies of works needed by their clients. In the long run this would be cheaper than laboriously keeping many copies of a union catalogue up to date.

So far I have said very little about how academic libraries could be made more accessible to the general public. To an academic administrator, hard-pressed to meet the constantly growing demands of his own students and faculty, this problem seems almost insoluble.

He cannot afford to buy additional copies of books, for which there is already heavy demand, to serve the needs of non-tuition paying or non-fee paying persons. Nor can he provide expensive reference services without charge. Perhaps the best—though inadequate—solution to this problem is to sell services at cost, or to enter into contractual relationships with public institutions. In that way a special reference service could be maintained for users who were not members of the college or university. Such costs should, of course, include a charge for reproducing the material consulted, if the user from the general public wished to have a copy he could take with him. Rarely could he be allowed to withdraw the work itself from the library.

Underlying this last point—indeed fundamental to all that I have said—is the assumption that scholars and students will need for the foreseeable future to handle, read, re-read, analyze, and digest books, documents, manuscripts, and other records. Being an historian, I know from personal experience that this kind of work is not an instantaneous process. People overawed by the possibilities of what are being called "the informational sciences" tend to overlook the sweat and agony that goes into creative use of library resources. It is not just a matter of quick reference to a fact or of excerpting material by others. It is more often than not a matter of examining a work—the information it contains and the arguments and interpretations built upon that information. It requires therefore ready and repeated access to the key volumes that a student and researcher needs.

This point brings me to my final and perhaps most heretical proposal. I strongly suspect that academic libraries may very well have to impose drastic limitations on circulation of many items in their collections. Again I must allude to my own experience. Some of my most effective work has been done in places like the Henry E. Huntington Library in San Marino, which does not allow any of its books—ancient or modern—to circulate. I used to travel twice a week from Westwood to San Marino to work at the Huntington because there I would find most of the works I needed immediately available and I would get twice the work done in half the time it would take me at UCLA. The lesson I draw from this experience is that books which do not circulate are more readily accessible to a greater number of people than ones that do. They don't, for instance, get forgotten or misplaced in some faculty member's study. They are, therefore, more likely to receive constant use, if they are works that are in considerable demand. I hasten to add that not all items in an academic library need to be placed under such restrictions. But those that are required by many scholars and students in the same field, or by several in different fields, should be. Unfortunately for librarians, they and they only will incur the ill-will which the initiation of such a policy will provoke. And they only will be saddled with the well-nigh impossible task of deciding which books may circulate and which should not.

I fear that in these remarks I have not been either very original or very exhaustive in proposing ways in which academic libraries can overcome the "poverty of access". I hope, however, that in presenting these suggestions I have prepared the way for a discussion in which other delegates at this conference can produce some really fruitful proposals.

Dr. Samuel Halperin

ADDRESS, "LIBRARY FINANCING AT THE FEDERAL LEVEL"

Dr. Samuel Halperin
Deputy Assistant Secretary for Legislation
U. S. Department of Health, Education and Welfare

I have been asked to discuss the present and anticipated future Federal roles in building sound library services at all levels of our society. I will try to do so, although the present Federal role is complex and not easily summarized, while our future role is beclouded by such trifling details as our international military commitments, the state of our economy, the aspirations of our people, and—not least—the value judgments of the men and women who will sit in the White House and in the 91st and succeeding Congresses beginning next January.

At the outset, let me make it clear that, although I hail from Washington, my appearance this evening has absolutely no connection with the forthcoming primary election next Tuesday. Rather, I would have you understand that like most Administration officials, I am a nonpartisan, nonpolitical, professional, objective, liberal, loyal Democrat!

As such, I find it a particularly pleasant task to begin my remarks by reciting some of the achievements in improved library service which have come about in recent years due to the advent of Federal aid for libraries.

—In the past four years, the Federal Government has helped communities throughout the nation construct over 1,250 public community libraries.

—Over 85 million Americans are today served by public community libraries aided with Federal funds. In the past two years alone, communities embracing 20 million Americans have been added to the ranks of those receiving Federal funds.

—In the past three years, under Title II of the Elementary and Secondary Education Act, almost 43 million school children have benefited from new school library resources; per-pupil expenditures for school library books have almost doubled; 62,000 school libraries have been expanded and 3,600 new ones established; 29 states have opened over 250 special library centers.

—In higher education, almost 2,000 colleges and universities in every state of the Union have strengthened their academic libraries with the help of the Higher Education Act of 1965.

—In the past four years, 4,700 school librarians have been enrolled in National Defense Education Act summer training institutes and 1,350 graduate fellowships in library science have been awarded.

Because there is now a large number of Federal library and library-related programs and a mere recitation of them could make for dull listening, I have prepared for distribution two documents which may repay your individual study at home or in your office. The first is a brief six-page description of some of the major Federal programs which aid libraries at the elementary and secondary level, at the college level, and in the community. The second is a table which shows what funds the Congress has actually appropriated in the current (1968) fiscal year, what President Johnson has budgeted for these programs for the coming year and, specifically, how the State of California would fare under these budgetary allocations.

Looking at the table, we see that the largest dollar impact of Federal funds upon the State of California is in the elementary and secondary education areas. Under Title III of the National Defense Education Act and Title II of the Elementary and Secondary Education Act, library books, audio-visual materials and staff assistance are provided in the amount of at least $5 million. Possibly two to four times that amount is also allocated to California public schools from other titles in the ESEA, particularly Titles I and III.

In the public library field, Federal funding in California amounts to approximately $2.7 million for library services, while construction assistance is down sharply, to about half a million dollars in FY 1969.

A special word is in order about the budgetary choices made by the Administration in preparing the fiscal year 1969 budget. As you know, this has not been the best of years for Federal budget-makers. Even though my associates at the Bureau of the Budget define a "normal year" as "one that is a little worse than last year and a little bit better than next year," the agony of the fiscal 1969 budget was particularly pronounced.

The basic principle underlining the hard fiscal choices faced by the President was simply this: When choices had to be made between programs providing direct services to people and programs to acquire goods and materials or to construct buildings, the choice would uniformly be made in favor of the former. Thus, Title I of the ESEA is budgeted at $1.2 billion, roughly last year's level, and Title I of the Library Services and Construction Act, for library services, is budgeted at $35 million, the same as the fiscal year 1968. On the other hand, public library construction funds are budgeted at $9.2 million, or roughly one-third of the $27.2 million originally appropriated by the Congress for the current year. The NDEA Title III program, to acquire instructional equipment and audio-visual materials, is budgeted at less than $18 million, compared with last year's $82 million, and the ESEA Title II book acquisition program is budgeted at $46 million, contrasted with last year's $104.5 million.

Other examples could be cited. The point simply is that we have tried—in these very difficult times—to maintain prior levels of funding for those programs which provide direct educational and library services to people, although, reluctantly, we have felt it necessary to cut back on the purchase of books and buildings which, to be sure, are an integral part of an ultimately adequate library and educational program.

The great English statesman-author Benjamin Disraeli once said that "if you wish to keep your respect for government, like sausage, you should not look too closely into its makings." I remember those words every time I contemplate the severe winter of discontent from which we are emerging and imagine the long hot summer into which we are hurtling. In Disraeli's spirit, we would do well not to become totally immersed in current problems. Yet, it would be wrong for me to have flown these 3,000 miles without giving you some feeling for what the pending controversy surrounding Federal taxes and cuts in Federal expenditures could mean to your programs in California.

As you probably know, a House-Senate Conference Committee has agreed upon a bill to be voted on after Memorial Day which would slightly increase personal and corporate income taxes and, at the same time, cut Federal expenditures in the coming year by $6 billion and Federal appropriations by $10 billion. The larger figure represents new commitments which will have to be foregone while the $6 billion figure means dollars which will have to be cut from actual spending in the coming fiscal year. Under the plan recommended by the Conference Committee to the House and to the Senate, the Congress will be responsible for making initial determinations of where the $6 billion in cuts are to be. When that process has been completed through the passage of some 15 different appropriations bills, the Executive Branch must then make up the difference to a total of $6 billion.

No one can now tell whether the conference report will become law nor exactly where the Congress will choose to make the cuts required by their action in passing the combined tax bill and expenditure cut. However, if the Executive Branch is forced to make the lion's share of these cuts there simply is no way that it can be done without substantial reductions in the health, education, and library programs administered by the Department of Health, Education, and Welfare. Our department is one having quite substantial amounts of what are called "controllable expenditures," that is, payments which can *legally* be deferred or cancelled. Thus, in any Executive Branch belt-tightening, we shall be forced without recourse to make significant reduction in existing Federal education and library programs.

Fortunately, my assignment enables me to look ahead and to dream of better times. Working with legislation does not permit one to be a perennial pessimist—one of those "persons who has unlimited faith in the inevitability of future degenerations." Our economy is growing at an impressive rate while our rising Gross National Product produces large, new revenues which can—if we will it—produce the resources necessary to cope with most of the manifold problems of life in mid-20th Century America. I should like to believe that before long we shall be able to expand substantially the Federal investment in sound library programs at the same time that we move toward the solution of other critical national problems.

The first point to be made about future Federal financing of libraries is that there is nothing automatic about such support. All about us, we see an array of critical and demanding deficits. It has been reliably estimated, for example, that it would take $10 billion for the necessary remodeling and modernization of our nation's hospitals; $15 billion to eliminate the current backlog of public school classrooms; perhaps $100 billion just to get started on the worst of our water pollution problems; not to mention the critical demands of job training, housing and urban renewal, mass transportation, air pollution, and so on. An old Navajo legend says that "Although man may eventually live to be a hundred, he will still never have enough time to do everything his wife wishes him to do." So, no nation, not even the richest, can do all of the things that someone believes need doing.

Thus, whether Federal funds become available for future library programs depends in large measure on how effectively the informed people of America speak out and demand more resources for library services. That point is familiar, but what must be emphasized is that the competition for Federal funds is likely to be keener than ever before now that more groups and interests have found a path to the Federal Treasury. This is particularly true in the field of education. As you know, it has only been in the last three years that most educators have come to rely upon Washington for a share of their operating funds. Once upon a time, educators regarded Federal funds as "tainted money." Now they are telling the Congress that "taint enough!" While Federal funds now account for approximately 8 percent of the operating revenues of our elementary and secondary schools and some 25 percent of the funding for our institutions of higher learning, we hear on every hand that, in the post-Vietnam era, Federal funds should rise to at least one-third in the elementary and secondary field, and at least one-half in the field of higher education.

There is another new dimension in this competitive scene: the Program Planning and Budgeting System, or PPBS. Briefly stated, PPBS means that the Executive Branch of Government is attempting to discover which Federal programs "pay off" in terms of improved life for the people served. With a multiplicity of claimants on the Federal dollar, where can the taxpayers get the most for their money? Measured objectively, comparing one program with others, which programs are working best at least cost to the taxpayer and to the public as consumer?

To be sure, PPBS measurements are still in their infant stage of development and budgetary judgments today are bolstered more by preference than by hard data. But, in the months and years ahead, the allocation of scarce resources will go to those interests which can dramatize their programs and show how they are improving the quality of life in the nation. Persons interested in improved library services can no longer afford to think that "good library services speak for themselves." In the perceptive words of Gerold W. Jolusen in his *Minimum Standards for Public Libraries:*

> "One obligation resting upon every public institution in a democracy is that of standing ready at all times to render an account of itself to the people and to show cause why they should continue to support it. No institution is so lordly that its right to existence is beyond challenge, and none, except perhaps public monuments, can rightfully claim present consideration on the basis of past distinction. The public library is not exempt from this rule."

When there are all kinds of good things to do, only effective presentations which demonstrate positive correlations between investment in library services and improved learning and public enlightenment can provide any measure of confidence in the future growth of Federal support for libraries.

Leaving this general, if too-often-neglected, point, let me speculate about some specific legislative programs we might expect to emerge in the library area over the next four years.

A major influence affecting future legislation will be the forthcoming report of the National Advisory Commission on Libraries. (This blue ribbon panel of 20 contains three distinguished Californians: Launor F. Carter of Systems Development Corporation, Santa Monica; Mildred P. Frary of the Los Angeles City Schools Libraries; and Wilbur L. Schramm of Stanford University.) In the past, the Administration has relied heavily upon the judgment of such non-governmental experts in framing its legislative proposals and I would expect that this would again be the case.

Pending the report of the National Advisory Commission I can only offer a personal set of priorities and I shall do so with the clear proviso that my remarks cannot be taken to represent Administration policy for, in fact, none has yet been developed in the library field.

First, I see an inescapable need to strengthen State Library agencies. Federal legislation has recently placed a massive burden upon the shoulders of the men and women who operate the all-too-small State Library agencies which are expected to serve the general public, State-operated institutions, all branches of the State Government, in some instances the schools, and to provide leadership for total library planning. One cannot help but be impressed by the critical role of the State Library agency when one reads, for example, such a lucid description of her work as Mrs. Carma Leigh recently wrote in the April issue of the *Wilson Library Bulletin* ("The Changing Role of the State Librarian"). Surely, the Federal Government has a stake in the quality of State Library agencies and an investment to protect by virtue of all the Federal funds which are channeled through such State Library agencies.

Thus, I would expect Federal legislation to do for State Library agencies what Federal programs have done more generally for State health and education agencies in such recent legislation as the Partnership for Health and Strengthening State Departments of Education (Title V of the Elementary and Secondary Education Act of 1965). Federal funds to help the states enlarge their library staffs, to improve consultative services, to expand special information resources, to initiate or expand library research and, especially, to coordinate state-wide library services and to promote long-range library planning are all very much in the national interest and I would expect this to be one of the first orders of business before the Congress in the not-too-distant future.

Secondly, in some form or another, I believe the nation will move further toward library and information *systems*, with emphasis on the concept of interconnections. In his Message on Education this past February 5, for example, President Johnson recommended enactment of the "Networks for Knowledge Act of 1968." The goal of this legislation was broadly stated in the President's Message:

> "We must apply more effectively the national resources we have. We must encourage better cooperation between the Nation's colleges and universities; and we should move to increase each institution's efficiency by exploiting the most advanced technology. . . This pilot program will provide new financial incentives to encourage colleges and universities to pool their resources by sharing faculties, facilities, equipment, library and educational television services. It will supplement the effort launched last year by the National Science Foundation to explore the potential of computers in education."

This legislation aims "to stimulate colleges and universities to share to an optimal extent, through cooperative arrangements, their technical and other educational and administrative facilities and resources while maintaining their respective institutional identities, and to test and demonstrate the effectiveness and efficiency of a variety of such arrangements, preferably on a multi-institutional basis."

As examples of what might be attempted under this broad authority, the bills (S. 3098 and H.R. 15067) would support:

> "(1) the collection and sharing (A) of modern curricular materials and (B) of information on promising developments in curriculums; (2) the development of effective systems of

> processing and maintaining financial and student records; (3) (A) joint use of facilities such as classrooms, libraries, or laboratories, including joint use of necessary books, materials, and equipment; or (B) affording access to specialized library collections through preparation of interinstitutional catalogs and through development of systems and preparation of suitable media for electronic or other rapid transmission of materials; (4) establishment and joint operation of closed-circuit television or equivalent transmission facilities; (5) establishment and joint operation of electronic computer networks and programs therefor, to be available to participating institutions for such purposes as financial and student records, student course work or transmission of library materials."

I cite this pending bill more as an example of a trend in Congressional thinking than as a specific bill to be enacted at this moment in history, although I do believe it has a good chance of securing enactment during this Congress. For, the fact is, Congress and the Administration are both increasingly worried about our national ability to do everything that needs to be done and to do it now. Under the circumstances, sharing knowledge, interconnections, information systems, data pooling, joint arrangements, consortia, and any other plan which gives promise of making expensive materials widely available to a variety of users without costly overlap and duplication—anything of this sort—becomes enormously attractive to political decision-makers.

Thus, we can understand the impatience of many Congressmen who insist that federal funds be used to promote interinstitutional cooperation, rather than to support a multiplicity of facilities, equipment and other costly information resources. In this light, too, we can probably expect more legislative provisions like that contained in Title II of the Elementary and Secondary Education Act which requires assurances that, "in order to secure the effective and efficient use of Federal funds, there will be appropriate coordination at both State and local levels between the (School Library Resources and Textbook Programs) and the program carried out under the Library Services and Construction Act."

Of course, the primary instrument designed by the Congress to foster and promote cooperative library services is Title III of the Library Services and Construction Act—the program for Interlibrary Cooperation. Unfortunately, this promising title has not yet been fully funded. But I believe that it will be, particularly if State Library agencies can show that the program interrelates not merely public community libraries, but also the libraries of schools, colleges and universities, specialized industrial and scientific collections, and some of the great national libraries of our country, such as the New York Public Library and Chicago's Crerar Library.

To be sure, the cost of these interlibrary connections and cooperative arrangements will rise rather than, as some Congressional observers expect, diminish. But the improvement in library services will be so marked that the public will be willing to pay for them in greater measure.

A final word about interconnections and other cooperative arrangements: There are many such opportunities to improve library services under existing laws. For example, the public libraries served and strengthened under Title I of the LSCA can be additional resources for college and university extension centers and public community college campuses now sprouting up around the country. To the extent that Title I LSCA programs are interrelated to the college libraries aided under Title II of the Higher Education Act, to that extent library services can well be improved and those who control the federal purse-strings induced to open them wider in the cause of more effective library services.

I shall now list other possible library programs which I believe the federal government might well finance in the foreseeable future.

Staffing for Title II of the Elementary and Secondary Education Act

Millions of books and other instructional materials have been acquired by school libraries since 1965 and many million more will be purchased in the years ahead. The next great barrier to improved school library services is, of course, professional and semiprofessional school library staff. I believe Congress will see the necessity of making personnel available so that books and audio-visual materials are effectively used by students, rather than merely stored or poorly used.

Libraries for Graduate Study and Research

Graduate enrollments are expanding roughly 50 percent faster than undergraduate enrollments and, as many of you are painfully aware, the costs of acquiring specialized materials for advanced study and research are also spiraling. When more funds become available for Title II-A of the Higher Education Act of 1965—the college library materials acquisition program—the Congress may well want to recognize the added costs of graduate education by instituting a formula which makes special provisions for this critical level of education.

In this light, too, we should constantly remind policy-makers that existing centers of library excellence must not be neglected while the nation meets the needs of expanding undergraduate enrollments, suburban growth, and new technologies. Excellence must be preserved in our great institutions of higher learning and in our major specialized collections. We must always strike a balance between building on the proven resources we already have and forging ahead to meet new challenges.

Library Research and Development

As I have already indicated, Congress' expectations for library technology are high. Lest we allow our desires to expand—science fiction fashion—faster than our capabilities, sound policy dictates the establishment of a center for advanced research in library and information systems of all types, with particular emphasis upon applications of the advanced technologies of computers and other information-handling machinery.

Library Programs for Special Groups

Concurrently with our efforts to strengthen the fundamental base of our library programs in the schools, colleges, and communities must be efforts to reach and teach those special groups which are not now sharing uniformly in the progress of our society.

Each of us has priorities as to where additional Federal funds should be directed; high on my list are special programs to provide new and imaginative types of library services for the residents of inner-city ghettos. Either through mobile services or neighborhood storefront libraries or through ways yet untested, library services must be brought increasingly to the poor, to the functionally illiterate, to the aged, to the handicapped, and to bypassed ethnic and linguistic minority groups, such as Mexican-Americans, Indians and others.

In the future, I believe, we shall see a special program to help these neglected groups or, possibly, an expansion of Title I of LSCA with some specific earmarking for the purposes I have mentioned as well as increased funding.

* * *

This is a heavy agenda for Federal action. Yet, future Federal actions can only be considered in the light of existing library programs and existing unmet library needs.

We know, for example, that there is a national shortage of nearly 100,000 librarians; that 36,000 public elementary schools still lack a centralized library; that 12 million Americans have no public library services at all; that two-thirds of all public libraries fail to meet the American Library Association standards for minimum size collection; that the per capita expenditure for library materials is only half of minimum standards; and that there are other unmet needs. Thus, the key questions facing our policy-makers should be; "What is the proper mix between new programs and the funding of existing programs?" "How shall we balance the demands of what we have started with the needs of what must be done if America is truly to obtain excellence in nationwide library services?"

ADDRESS, "LIBRARY FINANCING AT THE LOCAL LEVEL—THE SANTA FE SPRINGS EXPERIENCE"

William J. McCann *
Mayor pro tem., Santa Fe Springs

California has long since entered the stage of becoming an urban state, but the extent of the state's urbanization, its rate, and its character still have some astonishing features.

The 1960 census showed California to be 86.4% urban. My information indicates that this has now been changed to 90% urban. Furthermore, nearly three-fourths of the 1960 population was located within three centers—San Francisco/Oakland, Los Angeles, and San Diego.

The story of California's monumental growth in modern times equals in scope the great saga of 19th century in-migration of Europeans to the United States. But unlike the story of foreign migration, the California story has not ended, nor does it show any indication of ending. The outlook for the period ahead is for continued substantial population growth. Clearly, the California story is far from its final chapter.

Since the end of the Civil War, California has had an unprecedented rate of population growth, with the state's population doubling once every twenty years. The real meaning of this phenomenon is just beginning to be felt. If the growth that has characterized the last one hundred years continues to be valid, the population of the state will reach thirty million by the end of 1980.

The growth rates of California's population in the past have depended upon migration from other parts of the United States and the world. Even if a complete cessation of migration in the future were possible, accomplished by some magical Chinese wall on California's borders, we would still have a formidable continuous growth of population. The fact remains that the state's natural population increase alone is now becoming a very large factor.

Such a rapid rate of population growth has placed an indelible stamp on California lives and problems. First, of course, are the now huge needs for new jobs to keep pace with the growing population. Between 260,000 to 280,000 new jobs a year will be needed if growth continues as it has in the recent past, and at the forecast rate. This is about 1,000 per working day, or more than two new jobs a minute.

Commencing about 10 years from now the younger age groups of the labor force (ages 15 to 29) are expected to be a larger component of the total labor force than in 1960 (40 percent as compared to 31 percent). These are the ages at which employment and social problems have especially serious correlations.

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* In Mr. McCann's absence, his address was read by Mr. Wayne D. Wedin, Assistant City Manager, Santa Fe Springs.

The *growth syndrome*, as it might be called, has had, and promises to continue having, other effects than concern for employment. Both the private and public sectors have felt the pressures created by population growth more than any other single factor. As we all know this growth has brought the state into the field of providing educational and other service facilities on a scale unprecedented elsewhere in the nation.

Now let's take a few minutes to see what this all means and what implications it has for us. It seems to me that one of the major and very critical problems facing a highly urban state such as California is that it is very difficult politically to establish an effective and thorough sense of leadership to meet the problems of this kind of geographical area.

Taking the area with which I am most familiar, the Los Angeles metropolitan area consists of many cities, special districts, and counties.

It is extremely difficult to get a sense of leadership without a power structure, a force which does not seem to exist in this area. Thus, it becomes extremely hard to marshal the available resources to meet the problems that arise in the urban area.

It also seems most important in a fast growing area such as we have, that there be a conscientious effort to preserve the individuality of each citizen. In these days of computers and mechanized methods of handling information, we are experiencing a greater and greater tendency to deal with people on a non-personal, generalized basis. Most of us are known in many quarters purely as a credit card number or a social security number; yet there is a considerable body of thought that indicates that one of the really meaningful ingredients in working out and in solving problems is to give the individual a sense of identity and an opportunity for him to participate in the process of directing his destiny.

As Plato once said, "Where freedom lies, the individual is clearly able to order for himself his own life." And Mill carries this one step farther in his comments regarding the support of democracy by saying, "The superiority of democracy lies in the fact that it calls upon the citizen to weigh interests not his own, to be guided in cases of conflicting claims by another rule than his private partialities, to apply at every turn principles and maxims which have for their reason of existence the common good."

In addition to these kinds of problems which are probably the most difficult, we have the obvious complications of extreme growth and the need for physical facilities of all kinds. *Unfortunately, in almost all cases, these are very expensive facilities.* When these kinds of physical growth problems are compounded by the social implications of an urban area, where people are concentrating in larger and larger numbers, it seems to me that we have a very substantial and critical urban problem with some definite implications for the exercise of power by local government and the future of local government.

With the kinds of growth trends I have just discussed, how do we approach the subject of service provision in an intelligent manner at the local level? It seems to me that the approach one has to take in this kind of situation is to cooperate one with another, whether this be through the formation of cooperative governmental agencies or through participation in professional organizations which tend to represent individuals on an areawide or statewide basis.

The key ingredient that I feel has to be kept paramount in mind is that problems are being attacked on the basis on which they exist, and that problems are being met by citizens and cities with emphasis being placed on the individuality of local communities with a desire to preserve their own identity while still solving the problems. Because of the rather fantastic implications of the kind of urban problems that are now facing areas such as Los Angeles, there are probably more challenges to the very best abilities of local government officials than they have ever faced before. If local government meets these challenges, this form of government will be stronger than it has ever been before. If it fails to meet these challenges someone else (such as the federal government) is going to step in and perform the services that are needed.

Benefits and Standards

Now that we have spent a few minutes reviewing the general conditions that affect the provision of library service within the State of California, let me suggest that the style of service provision and funding arrangements for libraries varies a great deal within the State of California itself. Some libraries operate as semi-autonomous functional units with separate administrative boards to which the staff is responsible. Some libraries on the other hand are members of tight-knit organizations where the library is but one of several subject specialties within the agency's area of service provision. Other libraries are arranged on the basis of a single area of service provision. Some libraries are arranged on the basis of a single-purpose service district concept while others are parts of larger governmental organizations such as counties. Some library organizations have support solely from special property taxes for library services. Still other organizations are funded by being a part of total city or county organizations where they are but one of several agencies, all funded from the general revenues of that particular governmental agency.

Santa Fe Springs Experience

At this point I hope you will forgive me for indulging in a bit of home-town pride, because I intend to spend a few minutes talking about what I call "The Santa Fe Springs Experience." I don't name it this because we have any original patent upon the materials

I will be discussing with you, however—I do so because it is this community with which I am most familiar.

As an elected city official, it is vitally important to me that the provision of library services be geared specifically to the educational, cultural, and social needs of our citizens and that these services be provided on as high a level as possible in the community. In order to do this, the library function within the City of Santa Fe Springs is but one of several departments on an equal level with one another that report directly to the City Manager. All departments are funded directly out of the city's general fund which has as its base not only property tax but such revenues as sales tax, permits and fees, and many other municipal funding sources that are available within the State of California. It should be noted at this point that if libraries are supported by the general funds of the city, they will be in a position to benefit from any state-wide tax reform that would be designed to help the financial lot of governmental agencies that are struggling under the burden of ever increasing service loads.

A budget is prepared by the library department each year, as budgets are prepared by all city departments, and submitted to the City Manager who reviews and usually revises them and forwards them to the City Council for final approval and funding. In the case of the City of Santa Fe Springs, there is no advisory or administrative board that operates in relation to the library function.

As elected officials we look to the people within our management team—which most certainly includes the Librarian—to advise us of those things which they feel are needed within the community. We then must evaluate the needs presented to us and provide appropriate funding. This arrangement has the ability to place the library staff in the positive position of being service-oriented as opposed to negatively concerned with how they are going to raise the money to keep the operations going. While we certainly don't expect that our departments would operate without thought of funding, we do expect them to be realistic in terms of advising us of the educational, cultural, and social needs of the community as they see them.

It then becomes incumbent upon the members of the City Council and the members of the City Manager's staff to investigate very thoroughly all possible funding sources for all aspects of the municipal service program. The most common of these, of course, include revenues derived from property tax and sales tax. As I briefly mentioned before, there are many other sources of local government revenue and some of these include licenses and permits, fines and forfeitures, revenue from use of money and property, revenue from other agencies, and charges for current services. These funding sources, however, may not be adequate to provide the levels of service which a local community needs. In this event, ingenuity must be exercised to identify and consider all types of funding that might be available. This would mean entering into a very real and personal relationship with other governmental agencies such as the federal government, state government, and county government to determine areas where cooperation can be utilized for the benefit of the public.

Many funding arrangements are possible, and have been referred to by the previous speakers, from the federal government and the state government. Maximum utilization of these sources of revenues must be made to provide the kinds of services that are necessary.

In addition I would suggest that public agencies have been remiss in the past in not becoming more involved in partnerships with members of private industry and foundations.

As one who is familiar with private industry, I can attest to the fact that it is increasingly aware of its community responsibilities and is increasingly entering into arrangements for provision of services once offered only by government. We need only to expand our imaginations to broaden these types of relationships. I need not belabor the point of foundations here, but it should be remembered by all of us that a large number of foundations exist whose purpose it is either in full or in part to assist in the provision of library and library-oriented programs. I would challenge you to loosen up your imagination to devise programs that would be of interest to these foundations in order to help supplement your revenue sources in a way that would enable you to provide more meaningful and more imaginative programs in your communities.

Not too long ago I was visiting a friend's house when his young son drove his kiddie car up to me and looked at me very seriously and said, "Mr. McCann, would you help me fix my flat tire?" In all the seriousness of the moment, I bent over and helped this young man fix the imaginary flat tire on his kiddie car. Like an efficient truck driver, the young man then got into his car and imagined that he was trying to start it. Signs of disappointment immediately showed upon his face as the car made not one move forward. Getting out of his vehicle again he walked around it, opened an imaginary hood, looked underneath, walked around to the back, examined all of the tires, but still found to his dismay that the vehicle was not operating. As I watched intently, he turned to me and said, "Do you have a pencil?" Upon getting the instrument he desired, he dipped it in an imaginary gas tank on the rear of the vehicle. Withdrawing the pencil, he held it in the air and with a look of seasoned experience he said, "Aha, I am out of gas," whereupon he ran into the kitchen, grabbed a glass of water, brought it back, drank it down, jumped into the car, and sped off into the other room. My friends, imagination made that car run and imagination will make the library services within the State of California not only run but run at a level that far exceeds the services presently being provided to our citizens.

The area of art and culture is the library role of tomorrow and can be its biggest ally in securing local finances. Once the library relates to and involves all segments of the community, growth and support is limited only by imagination. Because it is part of the city's management team, our Santa Fe Springs Public Library is funded as a part of our total city service program in a fashion that is much stronger than if it were a separate organization or entity. Our per capita funding for 1968–69 library services is over $8.00. This is compared to a minimum per capita support goal of $5.00 and average per capita city support of $3.64. Our library is also a member of the Metropolitan Cooperative Library System and we are pleased with the services that are accruing to us as a result of that participation.

If your library is located in an area where profitable results could be attained by cooperative arrangements with other local governmental jurisdictions, private industry, citizens' groups, various foundations, and participation with the federal government in its library assistance programs, I would strongly urge you to consider all these in addition to your traditional method of funding for library programs at the local level. We need to work together to expand our levels of service, but yet maintain the ability of the citizen to express himself at the lowest possible political base. It is through means such as these that the citizenry will achieve its maximum degree of participation and fulfillment and at the same time the library service level will receive the maximum amount of benefit as a result of cooperative, positive effort on our part.

You have heard the saying, "There are two ways to get to the top of a tree. You can sit on an acorn and wait for it to grow or you can climb that tree quickly and briskly and get to the top." The whole future of library service provision within the State of California is in our hands. All it takes is imagination, cooperation, and enthusiasm to make it what I am sure all of us want it to be. The next move is up to us.

As Frederic Melcher said so well, "A great nation is a reading nation and in this broad country of ours, books should be fully available for every boy and girl. Until they are fully available, we have a great task."

SUMMARY REPORTS

COMMUNICATIONS

Helen J. Waldron, *Library Manager*
The RAND Corporation

1. One of our major problems is the communications gap, which seems to extend in all possible directions. It exists between different types of libraries, so that special librarians rarely talk to school librarians, school librarians are seldom able to talk to academic librarians, and so on. Even librarians belonging to the same type of library often do not know what is going on a few miles away.

An even more serious communications gap exists between professional librarians and the various governmental authorities, particularly those who allocate the sums of money under which we must operate. If we expect support from these governmental authorities—whether Boards of Trustees, City Councils, Boards of Supervisors, or Upper or Account Management—they must understand what our problems are and what our needs and services represent. It is obviously up to us to bridge this gap.

Still another serious gap lies between the library and its own community of users. How can we be sure what the user wants—and even more important, the non-user? There are several reasons for such gaps: resistance to change; lack of time; lack of structured information about our own organization; failure to recognize that valuable feedback may come from the user. One solution suggested by the discussion groups was to delineate the goals of one's organization in user terms, so that the user will know how we can help him. Another solution is to establish more face-to-face relationships between librarians, between librarians and trustees, between librarians and citizens. Only one discussion group saw fit to give the initiative to a particular group, suggesting that the public librarians take responsibility for bridging the gap between kinds of libraries. Other solutions were the establishing of new programs for effective service with emphasis on the user, not the librarian, and the planning of special staff training programs.

2. A second major problem brought out in each group was that of user needs. We do not know enough about user needs, and until we know more, we cannot organize our services so as to meet them. When we have learned more about what our users need and want, we must then select the techniques which will best serve them, and not the other way around. Even more serious is our failure to reach the non-user, who far outnumbers the user. In-service training of library staff and user-directed courses in library schools were among the suggested solutions.

Mr. Robert J. Keyes, Assistant to Governor Reagan for Community Relations, presided at the final session.

The only concrete suggestion made for determining user needs was that of the survey initiated and conducted by the library with possible outside assistance. Like the other solutions, this calls for additional funds from some source.

3. The third major problem discussed was that of cooperation. There can be no cooperation without communication, and meetings such as this one, bringing together representatives from all types of libraries and from various governing bodies, are a good start. Many of the recommendations were in very general terms, perhaps because this is the first such broadly representative conference to be held. I would hope that we have laid good groundwork for future activities.

I will add two general recommendations that are not restricted to communications or any other single problem. One is for several small, carefully designed projects which can be properly evaluated. If you can prove the worth of a small pilot program, it is much easier to follow with a larger one, because you have something worth showing to the people who must allocate the necessary funds.

The second recommendation, which I am sure will please Mrs. Leigh, is that more funds be allocated to the State Library to improve its functions as a clearinghouse. This is obviously a recognition that this is an important function of the State Library.

RESOURCES

Rutherford D. Rogers, *Director*
The Stanford University Libraries

1. The present social and technological revolutions make it imperative that libraries broaden, deepen, and humanize their services in order to reach all kinds of people. There is impressive evidence that audio-visual materials provide an effective means of reaching disadvantaged groups and engendering an interest in a wider spectrum of library materials.

2. Despite the imperative just stated, libraries of all types lack adequate resources, whether we define resources as library materials, the requisite staff to organize collections and provide services, or the funds essential to procure such materials and staff.

3. Although library materials may be available somewhere in the state to meet specialized research and information needs, such resources are too largely inaccessible because of the lack of a central record of the library materials that exist and where they are located. The need for research and informational materials is such that greater resources need to be built for deployment within the state; nonetheless, it is extremely urgent that we bend every effort to make maximum use of existing resources.

The State Library is the obvious agency to create centralized union catalogs of library materials, and it is therefore recommended that increased funds be made available to the State Library to carry forward this task without delay, making use, wherever appropriate, of computer applications.

4. While there is evidence that combining libraries into systems enhances the availability of library materials to those served by such systems, it is axiomatic that merely combining several weak libraries does not make a strong one. Each library has to have certain minimum resources; otherwise, its patrons cannot be satisfactorily served no matter how efficiently a system of libraries functions. It is the rule rather than the exception in California that libraries of all kinds fail by a substantial margin to meet acceptable standards in terms of total collections and current expenditures.

5. Computer applications are beginning to be successful in specialized library operations, but there is no near-term prospect that such techniques will render unnecessary the acquisition of library materials in traditional forms. We nonetheless recognize the need for continued energetic experimentation with computer applications.

6. We also recognize the need for greater cooperation among libraries of all types in making maximum use of resources. It is believed that such cooperation is most likely to succeed through concerted efforts at local levels.

PLANNING

Don W. Green, *Director, Market Research*
Litton Industries, Inc.

From the reports of our discussion groups, it is clear that we are not satisfied with our progress in California. We are attempting to increase our communications in all ways, and we must bring all types of libraries closer together if we are to give maximum service to the user and bring in the non-user as well.

It might be worthwhile to indicate the way industry tackles problems that are similar to those that beset libraries and library systems. Industry would ask, what is the product? How do you define your library and its services? How is the staff used to serve all age and interest groups? Are minority needs being met? Is the library serving the needs of business and industry, the need for recreational materials, the needs of students?

How do you sell your product? Do you wait for the user to come to you, or do you go out to him? How do you let people know that you have something new, or have long had something that is useful to them?

What is the public image of the library? How do you analyze the library's competition—television, paperbacks?

Having gathered the answers to these and other questions, we must use the information to implement our plans efficiently and get the maximum return on our investment. We meet the existing demands; we plan for future demands; and we provide for changes in the organization as needs and conditions demand. As our real understanding of the needs grows, and as we provide for the needs, we can become more sophisticated in accommodating the library organization to them. We can then truly plan, and truly meet present needs as we have identified them.

Some of the recommendations of the discussion groups on planning included:

The State Library, in cooperation with other groups, should develop a plan of statewide utilization of total library services.

Political jurisdictions and other barriers must not determine the limits of library service.

It is important to maintain the individuality of various units, but standardization of procedures will be necessary in order to function properly.

A Master Plan for the development of inter-library systems is essential. Meanwhile, informal cooperation should be expanded. The State Library should conduct and publish a survey that will identify existing partnerships—both formal and informal—to help librarians find and explore suitable cooperative arrangements. Federal legislation should also be used to encourage cooperation between different types of libraries.

If partnerships are to be set up or strengthened, librarians from all types of libraries must continue to meet and work together through a strong professional association.

Cooperative partnerships, to be successful, must be based on and justified by added benefits and improved quality of service, not on cutbacks and the money to be saved.

A council was recommended of librarians and school personnel to meet regularly to work toward the improvement of service to students. High school students should have access to all needed materials from public and special libraries.

A trustee recommended that system councils include laymen in membership.

Resource library centers are needed. Feasibility studies and user studies on the subject are being carried out in both northern and southern California.

It was recommended that after forming partnerships we concentrate on service to minorities and the culturally deprived.

Recognizing such problem areas as those of geographic boundaries, keeping perspective in the use of scientific and technological resources, the difficulty of measuring service, and the difficulty of establishing procedures and standards through trial and error, the group as a whole offered these recommendations:

1. Realizing that the effectiveness of any system is dependent upon the components of that system, and that consideration must be given to the physical and real access to information, it is recommended that legislative support from the state level be afforded to the State Library to make it possible for certain developments to be made.

2. With this support and financial strength, the State Library should establish specifications to develop a union catalog of all holdings in the state. This catalog should be developed in a common format, by local networks in compatibility with each other and as a totality.

The group further noted that the development of local systems in California is a first step and probably all that can be done with present funding. Soon, however, local libraries and library systems should be able to tie into larger information services, so that they can effectively bring to their constituent members the large reservoirs of knowledge being created and developed by information sciences and through technology.

FINANCING

James Q. Brett, *Senior Vice President*
Coldwell, Banker and Company

(Mr. Brett stated that the reports of the four discussion groups on the subject of Financing Partnerships for California Libraries were each so well-stated and significant, and of such variety, that he would report them verbatim to the closing session rather than attempting to condense and summarize. The four reports follow.)

Discussion Group No. 1:

1. It was pointed out that the Legislature has immediate control over only about 30% of the State budget, and the rest is for constitutional or statutory on-going programs. Recommended reading is the State Department of Finance publication: *State of California Support and Local Assistance Budget for the Fiscal Year July 1, 1968 to June 30, 1969 Submitted by Ronald Reagan, Governor, to the California Legislature, 1968 Regular Session;* and *Analysis of the Budget Bill of the State of California for the Fiscal Year July 1, 1968, to June 30, 1969; Report of the Legislative Analyst to the Joint Legislative Budget Committee.*

2. Recurring comments advocated developing grass roots interest in library activities in order to obtain needed support. Librarians must have a strong conviction that their libraries are providing a valuable and important service essential to the advancement of our culture in order to "enthuse" supporters.

3. Friends of the Library and other interested groups must act as "political impact groups" to help gain financial support by lobbying their political bodies.

4. It is recommended that there be a statewide library card, and that a committee of the California Library Association be appointed immediately to formulate a plan for implementation. The imbalance of cost for service is to be financed at the state level.

5. The group suggests that the entire conference approve a second recommendation as follows: As a first step toward achieving the meaningful partnership program called for in the Governor's Message to his Conference on Libraries, we recommend that the Conference go on record as urging the Governor and Legislature to approve the full amount authorized by the Public Library Services Act of 1966, which this year amounts to $5,600,000 (reference: State Budget Item 286). We urge the adoption of this recommendation by the entire Conference assembled.

(*Note:* As the Conference was not constituted as a voting body, neither this action nor other group recommendations of this nature were offered as motions to the closing session.)

Discussion Group No. 2:

1. The group paid heed to the statement of Dr. Halperin that federal legislators are interested in proposals which are based on: improvement of staff, technological improvement, research, and service to special groups, including the disadvantaged. It was felt that these areas also have local appeal, but that advocates of "gadgetry" should be discouraged.

2. Although the public relations value of gifts is recognized, and their usefulness to enrichment of collections acknowledged, it was

agreed that no lasting reliance should be placed on gifts or user fees. Support instead should be sought from all levels of government for libraries as essential educational facilities.

3. It was agreed that if libraries are to receive public support, they must render services which justify that support.

4. It was also agreed that information on the library needs of the nation is not sufficiently available. Therefore it is recommended that:

This Conference transmit to the Executive Director of the American Library Association a strong appeal for early attention to achieving a comprehensive study of the library needs of the American people, a study which will give direction to the organization of a total program of library service for the nation.

Discussion Group No. 3:

1. We point with pride to the substantial advances made by the cooperative public library programs that have developed under the Public Library Services Act with minimal funding. This proves the value of full funding in order to achieve in the public interest the best level of service to all the citizens of the state. There is a real danger that the gains realized by systems already formed will be lost if funding does not continue and increase.

2. The complexity of library needs in California, including the reference and research needs of education at all levels, and of industry and business, makes it clear that the state should be concerned with the total capacity of the library community to serve the citizens of the state. Thus, other types of libraries in addition to public libraries should become the concern of the state.

3. The problems are so complex that there is an urgent need for basic facts about library requirements and library capabilities among all types of libraries throughout the state. It is believed that a rational program can only be developed from such a factual basis and by a broad spectrum of California citizens.

It is recommended that a blue-ribbon, continuing Governor's Commission on Libraries be established, including representatives of the state government, lay persons interested in libraries and information services, and library administrators. Such a Commission should be supported with staff assistance to make possible the studies it must undertake. It is suggested that such staff assistance might be centered in the State Library.

Discussion Group No. 4:

It is recommended that:

1. The State Legislature and Administration be strongly urged to support library programs to full funding and that priority be given to cooperative ventures; and that librarians, trustees, Friends of Libraries and school supporters follow through with local political

leaders and state and federal representatives to encourage support of library bills.

2. The State Library be requested to summarize for all types of libraries the funding acts and private funds that are available for library programs.

CLOSING REMARKS

Mrs. Carma Leigh

Now a few words with which to close this Conference.

My first and perhaps most appropriate closing remark is to define what a conference is:

A conference is a get-together of people to talk about what they ought to be doing already.

And so ought we to have long been in active, working, mutually beneficial partnerships, at all levels of government, and between all types of libraries and organizations. All this to the end of the most complete, efficient, useful, and reliable library, information, and research services to all the people of all ages in California—those people I tried to describe to you last night, from the youngest to the oldest, from the weakest to the strongest, the whole wide spectrum of individual opinions and beliefs.

But "ought to have" and "have done," or "are doing," are different things.

And neither is the doing simple. The late Frederick Lewis Allen, in his book *The Big Change*, noted the improvement in the quality of American life between 1900 and 1950 caused by the immense spread of education. Mr. Allen, as you know, was not only an author but the distinguished editor of *Harper's Magazine*. He was also a trustee of Bennington College while my husband was President there. At a Bennington meeting, Mr. Allen confessed his envy of his friend Louis Zahner, who early in his college career discovered that one route to immortality was to attach one's name to a scientific law. Zahner pointed out that the names of Isaac Newton and Robert Boyle were known to every schoolboy, while those of their contemporaries were long since forgotten. So in his senior year at Yale he enunciated Zahner's Law, a masterpiece of simplicity and elegance. Zahner's Law reads: *If you play with anything long enough, it will break.*

Whereupon, at the Bennington convocation, Mr. Allen announced Allen's Law, which he said he had worked on for a score of years. Allen's Law covers a wider range of phenomena than Zahner's, but it too is classically simple and elegant. It reads: *Everything is more complicated than it seems to most people.*

So, Developing Partnerships for California Libraries is more complicated than it seems—if it were not, surely we would have done more about it before now. We have done a lot, of course, but far from enough.

One of the many very satisfying things to me about this Conference is that I have seen and heard people—non-librarians and librarians (and all types of librarians)—talking to each other *and* listening to each other!

I have the impression, too, that each has admitted his library problems, his misgivings about the competence of the other and himself to solve the problems.

I suppose it can only be a healthful thing that we have done this—tried to take a look together at all the little and big library problems, complexities, complexes, and inferiorities and superiorities.

These problems run the whole gamut. They are sophisticated; they are simple; they are refined; they are crude; they are real; and some are more or less imagined; but I do assert to you that of one thing I am sure—they *are* soluble.

But they are soluble only if you use your will, your good will, your influence, your strength, your intelligence, and your knowledge to devise and apply the solutions.

To apply Allen's Law again, education is more complicated than it seems to most people; and it is vastly more complex than the public and private provision of schooling, kindergarten through college, for youngsters. In fact, schooling is only the beginning of education—a tooling up for the lifelong education that is to follow, or should follow.

The whole library system has a genuinely significant contribution to make to the life of this and all states.

It provides a means of continuing education and serves as a source of lifelong information and ideas, and the development and application of ideas in a society increasingly made up of individuals who have had the stimulus of high school and college education.

We are increasingly an educated people, but we still lack *fully* adequate means for continuing education after leaving the classroom.

The fact that the contribution of the library is more than wishful thinking is demonstrated by the amount and kinds of use made of the relatively few strong public and other libraries and library systems in the state.

This is changing, but it must change faster, and fresh and nontraditional methods must be developed to broaden the use of all libraries. The libraries traditionally reach what might be called the "middle third" of the population. Current public library users are (1) relatively well-educated people who (2) do not have particularly specialized reading interests.

If individuals *have* specialized interests, most public libraries lack the scope and depth of resources to serve them. If, on the other hand, people lack the stimulus of a considerable educational and cultural background, the average public library—indeed the majority of them—does not have the "outreach" to make books and information relevant to their needs. Happily, some breakthroughs are being made. You heard Lieutenant Governor Finch mention a few Sunday afternoon, and there are others, right here in this state.

And as Don Green told us, we are not adequately serving the majority, or the top third, of our population—they need information and ideas, too, and even the richest are poor beside the total of human knowledge, information and ideas.

Many significant changes have taken place in the last several years (and these will intensify) in the intellectual and cultural texture of community life, which have led to greater dependence on and need for library-type resources.

These changes are:

1. Holders of Doctor's degrees and other specialists have come out of the universities and colleges in increasing numbers and have taken up their lives in communities where the public library becomes their main resource.

2. Students in high schools and community colleges, faced with higher standards of education, have gone beyond their academic resources to public libraries in their search for materials.

3. Many Californians have reached out into the world of culture —art, theater, music, literature—which involves books, magazines, films, prints, and recordings.

4. We as a people are increasingly recognizing the previously invisible poor, the disadvantaged and culturally deprived people who are part of our society and had better be taken notice of or we will see—have already seen—the consequences in ways we definitely do not like. Let our libraries seek to devise ways in which our middle-class institutions will be of value to them.

And let us not ignore the advantaged, the "upper third"—we can help establish communication between the *three* thirds of all our people of all ages. It will—can—be a communication of ideas; for knowledge, information, and ideas are society's most precious, most valuable, and at the same time most practical commodities.

With the maximum effort you can make, and with the moderate money we in California can well afford, the total library system, statewide, could in five to ten years become a resource for every alert and ambitious person in the state. Its social range could extend from the family just starting to climb the economic ladder to the increasing number of graduate specialists functioning in communities well away from campus resources.

The library system—as it must become—and its historic and natural function is attuned to the cultural and educational surge which characterizes present-day California.

Now, saturated with libraries, may I thank you on behalf of the Governor and all of us who have worked on this conference, for coming, for talking, for listening, for thinking, and for the action you will take when you return home, and in the future. Hopefully, some of this action might consist of getting together on the local level, which you often do—but do it on at least as broad a basis—even broader—all types of librarians and non-librarians—and get to specifics on local and regional levels.

printed in CALIFORNIA OFFICE OF STATE PRINTING
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